**Supplemental Appendix**

**Full Title:** MLb-LDLr: A Machine Learning Model for Predicting the Pathogenicity of LDL receptor Missense Variants

**Brief title:** Machine-learning algorithm for LDLr missense variants

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**Characteristics included in the analysis.**

Seven characteristics were used to predict the pathogenicity of a variant: conservation of the mutated residue, charge change, the original amino acid, the substituting amino acid introduced by the mutation, the amino acid hydrophobicity change, the amino acid size change and the domain in which the mutation locates. These features were chosen due to many reasons: they are well established and defined; they provide objective, accurate and reliable information; the use of external software is not needed to their obtention, except the conservation analysis.

Conservation value of each residue were obtained by using a Multiple Sequence Alignment (Clustal Omega) (1). The sequence of 31 species available in UniProt (https://www.uniprot.org/) were introduced for the analysis (Table S1). Species with similar *LDLr* sequence length were aligned and the conservation value of each residue was determined using a software (https://compbio.cs.princeton.edu/conservation/score.html) (2). This software uses a combination of Jensen-Shannon divergence and the incorporation of

neighbouring positions conservation (3). To determine charge change, amino acids were classified depending on their charge and then they were paired with other types, giving a code to each possible change as follows: code A if a positive amino acid is replaced by a positive one, code B if a positive one is replaced by a negative one, etc. Both the hydrophobicity and size changes were calculated subtracting the hydrophobicity or the size of the original amino acid to the new one. Hydrophobicity and size values of each amino acid were obtained from the works of Kyte & Doolittle, and Zamyatnin, respectively (4, 5). Domain classification was performed by dividing the LDLr into nine mayor domains: Signal sequence, LBD (Ligand Binding Domain), EGF-A (Epidermal Growth Factor A subunit), EGF-B, β-propeller, EGF-C, O-linked domain, intermembrane domain and cytosolic domain (6). Hydrophobicity, size and charge values are shown on the Table S2, domain values on Table S3 and conservation values on the Table S4.

Table S1:  Species from which *LDLr* sequences were obtained for the amino acid conservation values calculation.

|  |  |  |
| --- | --- | --- |
| *Homo sapiens* | *Latimeria chalumnae* | *Pan troglodytes* |
| *Mus musculus* | *Ursus maritilus* | *Pan paniscus* |
| *Castor canadienses* | *Propithecus coquereli* | *Papio Anubis* |
| *Ictidolys tridecemlineatus* | *Vombatus ursinus* | *Sarcophilus harrisii* |
| *Mesocricetus auratus* | *Ursus arctos horribilis* | *Bos Taurus* |
| *Heterocephalus glaber* | *Mustela putorius furo* | *Bos indicus* |
| *Rattus norvegicus* | *Oryctolagus cuniculus* | *Cercocebus atys* |
| *Oncorhychus clarkii* | *Macaca fascicularis* | *Gallus gallus* |
| *Ictalurus punctatus* | *Sus scroga* | *Poeciliopsis prolífica* |
| *Alligator sinensis* | *Callithrix jacchus* | *Siniperca chuatsi* |
| *Takifugu rubripes* |  |  |

Table S2: Physicochemical characteristics of the amino acids

|  |  |  |  |
| --- | --- | --- | --- |
| Amino acid | Hydrophobicity | Size (Da) | Charge (pH 7.2) |
| Ala | 1.8 | 88.6 | No charge |
| Arg | -4.5 | 173.4 | Positive |
| Asn | -3.5 | 114.1 | No charge |
| Asp | -3.5 | 111.1 | Negative |
| Cys | 2.5 | 108.5 | No charge |
| Gln | -3.5 | 143.8 | No charge |
| Glu | -3.5 | 138.4 | Negative |
| Gly | -0.4 | 60.1 | No charge |
| His | -3.2 | 153.2 | Positive |
| Ile | 4.5 | 166.7 | No charge |
| Leu | 3.8 | 166.7 | No charge |
| Lys | -3.9 | 168.6 | Positive |
| Met | 1.9 | 162.9 | No charge |
| Phe | 2.8 | 189.9 | No charge |
| Pro | -1.6 | 112.7 | No charge |
| Ser | -0.8 | 89 | No charge |
| Thr | -0.7 | 116.1 | No charge |
| Trp | -0.9 | 227.8 | No charge |
| Tyr | -1.3 | 193.6 | No charge |
| Val | 4.2 | 140 | No charge |

Table S3: Length of LDLr domains.

|  |  |  |
| --- | --- | --- |
| Affected domain | First position | Last position |
| Signal sequence | 1 | 21 |
| LBD | 22 | 293 |
| EGF-A | 294 | 332 |
| EGF-B | 333 | 376 |
| β-propeller | 377 | 642 |
| EGF-C | 643 | 699 |
| O-linked | 700 | 747 |
| Intermembrane | 748 | 810 |
| Cytosolic | 811 | 860 |

Table S4: Conservation values of LDLr amino acids among species.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Position | Conservation | Position | Conservation | Position | Conservation |
| 1 | 0.307 | 288 | 0.760 | 575 | 0.753 |
| 2 | 0.303 | 289 | 0.787 | 576 | 0.842 |
| 3 | 0.290 | 290 | 0.744 | 577 | 0.871 |
| 4 | 0.344 | 291 | 0.653 | 578 | 0.769 |
| 5 | 0.348 | 292 | 0.622 | 579 | 0.823 |
| 6 | 0.323 | 293 | 0.690 | 580 | 0.766 |
| 7 | 0.226 | 294 | 0.678 | 581 | 0.778 |
| 8 | 0.330 | 295 | 0.668 | 582 | 0.740 |
| 9 | 0.377 | 296 | 0.735 | 583 | 0.818 |
| 10 | 0.476 | 297 | 0.690 | 584 | 0.738 |
| 11 | 0.413 | 298 | 0.589 | 585 | 0.728 |
| 12 | 0.401 | 299 | 0.555 | 586 | 0.744 |
| 13 | 0.402 | 300 | 0.716 | 587 | 0.777 |
| 14 | 0.434 | 301 | 0.723 | 588 | 0.732 |
| 15 | 0.437 | 302 | 0.803 | 589 | 0.730 |
| 16 | 0.443 | 303 | 0.744 | 590 | 0.764 |
| 17 | 0.401 | 304 | 0.809 | 591 | 0.741 |
| 18 | 0.357 | 305 | 0.806 | 592 | 0.764 |
| 19 | 0.375 | 306 | 0.802 | 593 | 0.724 |
| 20 | 0.369 | 307 | 0.801 | 594 | 0.703 |
| 21 | 0.396 | 308 | 0.779 | 595 | 0.771 |
| 22 | 0.434 | 309 | 0.787 | 596 | 0.703 |
| 23 | 0.458 | 310 | 0.681 | 597 | 0.685 |
| 24 | 0.481 | 311 | 0.664 | 598 | 0.644 |
| 25 | 0.531 | 312 | 0.645 | 599 | 0.660 |
| 26 | 0.484 | 313 | 0.723 | 600 | 0.582 |
| 27 | 0.709 | 314 | 0.567 | 601 | 0.631 |
| 28 | 0.552 | 315 | 0.531 | 602 | 0.598 |
| 29 | 0.613 | 316 | 0.629 | 603 | 0.541 |
| 30 | 0.638 | 317 | 0.644 | 604 | 0.600 |
| 31 | 0.676 | 318 | 0.695 | 605 | 0.673 |
| 32 | 0.765 | 319 | 0.600 | 606 | 0.648 |
| 33 | 0.720 | 320 | 0.585 | 607 | 0.800 |
| 34 | 0.814 | 321 | 0.650 | 608 | 0.792 |
| 35 | 0.655 | 322 | 0.654 | 609 | 0.715 |
| 36 | 0.758 | 323 | 0.670 | 610 | 0.743 |
| 37 | 0.772 | 324 | 0.700 | 611 | 0.711 |
| 38 | 0.702 | 325 | 0.758 | 612 | 0.720 |
| 39 | 0.804 | 326 | 0.743 | 613 | 0.723 |
| 40 | 0.756 | 327 | 0.766 | 614 | 0.771 |
| 41 | 0.690 | 328 | 0.595 | 615 | 0.767 |
| 42 | 0.660 | 329 | 0.778 | 616 | 0.746 |
| 43 | 0.693 | 330 | 0.627 | 617 | 0.749 |
| 44 | 0.822 | 331 | 0.705 | 618 | 0.769 |
| 45 | 0.735 | 332 | 0.677 | 619 | 0.807 |
| 46 | 0.815 | 333 | 0.663 | 620 | 0.841 |
| 47 | 0.776 | 334 | 0.669 | 621 | 0.761 |
| 48 | 0.716 | 335 | 0.657 | 622 | 0.755 |
| 49 | 0.635 | 336 | 0.566 | 623 | 0.624 |
| 50 | 0.588 | 337 | 0.577 | 624 | 0.560 |
| 51 | 0.694 | 338 | 0.695 | 625 | 0.642 |
| 52 | 0.760 | 339 | 0.551 | 626 | 0.570 |
| 53 | 0.578 | 340 | 0.740 | 627 | 0.633 |
| 54 | 0.777 | 341 | 0.753 | 628 | 0.638 |
| 55 | 0.718 | 342 | 0.590 | 629 | 0.599 |
| 56 | 0.687 | 343 | 0.731 | 630 | 0.699 |
| 57 | 0.763 | 344 | 0.653 | 631 | 0.652 |
| 58 | 0.744 | 345 | 0.593 | 632 | 0.660 |
| 59 | 0.611 | 346 | 0.638 | 633 | 0.692 |
| 60 | 0.651 | 347 | 0.542 | 634 | 0.561 |
| 61 | 0.662 | 348 | 0.577 | 635 | 0.637 |
| 62 | 0.630 | 349 | 0.543 | 636 | 0.611 |
| 63 | 0.742 | 350 | 0.642 | 637 | 0.474 |
| 64 | 0.550 | 351 | 0.670 | 638 | 0.624 |
| 65 | 0.663 | 352 | 0.783 | 639 | 0.604 |
| 66 | 0.594 | 353 | 0.735 | 640 | 0.515 |
| 67 | 0.639 | 354 | 0.796 | 641 | 0.560 |
| 68 | 0.703 | 355 | 0.775 | 642 | 0.572 |
| 69 | 0.567 | 356 | 0.779 | 643 | 0.606 |
| 70 | 0.544 | 357 | 0.779 | 644 | 0.587 |
| 71 | 0.517 | 358 | 0.803 | 645 | 0.555 |
| 72 | 0.618 | 359 | 0.682 | 646 | 0.649 |
| 73 | 0.699 | 360 | 0.630 | 647 | 0.545 |
| 74 | 0.657 | 361 | 0.708 | 648 | 0.617 |
| 75 | 0.779 | 362 | 0.688 | 649 | 0.667 |
| 76 | 0.723 | 363 | 0.648 | 650 | 0.599 |
| 77 | 0.603 | 364 | 0.795 | 651 | 0.621 |
| 78 | 0.582 | 365 | 0.722 | 652 | 0.561 |
| 79 | 0.524 | 366 | 0.801 | 653 | 0.547 |
| 80 | 0.578 | 367 | 0.694 | 654 | 0.556 |
| 81 | 0.607 | 368 | 0.818 | 655 | 0.577 |
| 82 | 0.709 | 369 | 0.718 | 656 | 0.702 |
| 83 | 0.670 | 370 | 0.777 | 657 | 0.643 |
| 84 | 0.722 | 371 | 0.705 | 658 | 0.639 |
| 85 | 0.531 | 372 | 0.624 | 659 | 0.642 |
| 86 | 0.617 | 373 | 0.746 | 660 | 0.703 |
| 87 | 0.787 | 374 | 0.684 | 661 | 0.724 |
| 88 | 0.679 | 375 | 0.743 | 662 | 0.564 |
| 89 | 0.786 | 376 | 0.798 | 663 | 0.624 |
| 90 | 0.750 | 377 | 0.803 | 664 | 0.591 |
| 91 | 0.652 | 378 | 0.670 | 665 | 0.657 |
| 92 | 0.677 | 379 | 0.798 | 666 | 0.635 |
| 93 | 0.562 | 380 | 0.612 | 667 | 0.644 |
| 94 | 0.723 | 381 | 0.625 | 668 | 0.493 |
| 95 | 0.748 | 382 | 0.705 | 669 | 0.372 |
| 96 | 0.612 | 383 | 0.696 | 670 | 0.384 |
| 97 | 0.719 | 384 | 0.660 | 671 | 0.331 |
| 98 | 0.654 | 385 | 0.579 | 672 | 0.423 |
| 99 | 0.657 | 386 | 0.687 | 673 | 0.437 |
| 100 | 0.703 | 387 | 0.731 | 674 | 0.647 |
| 101 | 0.707 | 388 | 0.526 | 675 | 0.679 |
| 102 | 0.558 | 389 | 0.666 | 676 | 0.666 |
| 103 | 0.609 | 390 | 0.682 | 677 | 0.743 |
| 104 | 0.722 | 391 | 0.614 | 678 | 0.665 |
| 105 | 0.480 | 392 | 0.733 | 679 | 0.681 |
| 106 | 0.621 | 393 | 0.659 | 680 | 0.713 |
| 107 | 0.628 | 394 | 0.652 | 681 | 0.736 |
| 108 | 0.542 | 395 | 0.523 | 682 | 0.713 |
| 109 | 0.675 | 396 | 0.587 | 683 | 0.750 |
| 110 | 0.514 | 397 | 0.548 | 684 | 0.714 |
| 111 | 0.507 | 398 | 0.665 | 685 | 0.741 |
| 112 | 0.625 | 399 | 0.635 | 686 | 0.637 |
| 113 | 0.636 | 400 | 0.682 | 687 | 0.597 |
| 114 | 0.689 | 401 | 0.739 | 688 | 0.612 |
| 115 | 0.674 | 402 | 0.686 | 689 | 0.563 |
| 116 | 0.745 | 403 | 0.756 | 690 | 0.667 |
| 117 | 0.618 | 404 | 0.789 | 691 | 0.728 |
| 118 | 0.681 | 405 | 0.755 | 692 | 0.715 |
| 119 | 0.715 | 406 | 0.779 | 693 | 0.753 |
| 120 | 0.601 | 407 | 0.804 | 694 | 0.755 |
| 121 | 0.707 | 408 | 0.740 | 695 | 0.749 |
| 122 | 0.611 | 409 | 0.746 | 696 | 0.800 |
| 123 | 0.598 | 410 | 0.746 | 697 | 0.697 |
| 124 | 0.505 | 411 | 0.627 | 698 | 0.785 |
| 125 | 0.522 | 412 | 0.598 | 699 | 0.675 |
| 126 | 0.667 | 413 | 0.583 | 700 | 0.692 |
| 127 | 0.594 | 414 | 0.591 | 701 | 0.598 |
| 128 | 0.708 | 415 | 0.690 | 702 | 0.624 |
| 129 | 0.648 | 416 | 0.755 | 703 | 0.463 |
| 130 | 0.454 | 417 | 0.731 | 704 | 0.576 |
| 131 | 0.641 | 418 | 0.719 | 705 | 0.559 |
| 132 | 0.493 | 419 | 0.696 | 706 | 0.492 |
| 133 | 0.682 | 420 | 0.562 | 707 | 0.640 |
| 134 | 0.679 | 421 | 0.531 | 708 | 0.692 |
| 135 | 0.566 | 422 | 0.549 | 709 | 0.694 |
| 136 | 0.738 | 423 | 0.582 | 710 | 0.630 |
| 137 | 0.703 | 424 | 0.609 | 711 | 0.692 |
| 138 | 0.676 | 425 | 0.666 | 712 | 0.465 |
| 139 | 0.697 | 426 | 0.671 | 713 | 0.417 |
| 140 | 0.699 | 427 | 0.683 | 714 | 0.378 |
| 141 | 0.526 | 428 | 0.713 | 715 | 0.380 |
| 142 | 0.561 | 429 | 0.647 | 716 | 0.410 |
| 143 | 0.665 | 430 | 0.718 | 717 | 0.473 |
| 144 | 0.601 | 431 | 0.701 | 718 | 0.457 |
| 145 | 0.507 | 432 | 0.685 | 719 | 0.446 |
| 146 | 0.554 | 433 | 0.764 | 720 | 0.479 |
| 147 | 0.664 | 434 | 0.625 | 721 | 0.457 |
| 148 | 0.728 | 435 | 0.682 | 722 | 0.441 |
| 149 | 0.591 | 436 | 0.676 | 723 | 0.407 |
| 150 | 0.699 | 437 | 0.645 | 724 | 0.436 |
| 151 | 0.594 | 438 | 0.578 | 725 | 0.432 |
| 152 | 0.596 | 439 | 0.646 | 726 | 0.403 |
| 153 | 0.727 | 440 | 0.645 | 727 | 0.362 |
| 154 | 0.677 | 441 | 0.691 | 728 | 0.362 |
| 155 | 0.742 | 442 | 0.778 | 729 | 0.360 |
| 156 | 0.693 | 443 | 0.833 | 730 | 0.262 |
| 157 | 0.649 | 444 | 0.758 | 731 | 0.315 |
| 158 | 0.605 | 445 | 0.807 | 732 | 0.375 |
| 159 | 0.548 | 446 | 0.711 | 733 | 0.361 |
| 160 | 0.704 | 447 | 0.708 | 734 | 0.361 |
| 161 | 0.569 | 448 | 0.735 | 735 | 0.366 |
| 162 | 0.691 | 449 | 0.717 | 736 | 0.307 |
| 163 | 0.522 | 450 | 0.718 | 737 | 0.329 |
| 164 | 0.601 | 451 | 0.727 | 738 | 0.474 |
| 165 | 0.743 | 452 | 0.719 | 739 | 0.442 |
| 166 | 0.584 | 453 | 0.708 | 740 | 0.426 |
| 167 | 0.750 | 454 | 0.656 | 741 | 0.486 |
| 168 | 0.711 | 455 | 0.554 | 742 | 0.451 |
| 169 | 0.610 | 456 | 0.623 | 743 | 0.413 |
| 170 | 0.718 | 457 | 0.633 | 744 | 0.427 |
| 171 | 0.570 | 458 | 0.461 | 745 | 0.440 |
| 172 | 0.686 | 459 | 0.599 | 746 | 0.416 |
| 173 | 0.726 | 460 | 0.528 | 747 | 0.471 |
| 174 | 0.505 | 461 | 0.513 | 748 | 0.384 |
| 175 | 0.719 | 462 | 0.543 | 749 | 0.412 |
| 176 | 0.676 | 463 | 0.569 | 750 | 0.340 |
| 177 | 0.674 | 464 | 0.543 | 751 | 0.326 |
| 178 | 0.750 | 465 | 0.670 | 752 | 0.297 |
| 179 | 0.728 | 466 | 0.584 | 753 | 0.411 |
| 180 | 0.737 | 467 | 0.634 | 754 | 0.320 |
| 181 | 0.731 | 468 | 0.626 | 755 | 0.393 |
| 182 | 0.631 | 469 | 0.644 | 756 | 0.392 |
| 183 | 0.628 | 470 | 0.564 | 757 | 0.546 |
| 184 | 0.687 | 471 | 0.522 | 758 | 0.476 |
| 185 | 0.465 | 472 | 0.565 | 759 | 0.492 |
| 186 | 0.489 | 473 | 0.574 | 760 | 0.598 |
| 187 | 0.431 | 474 | 0.605 | 761 | 0.535 |
| 188 | 0.335 | 475 | 0.673 | 762 | 0.460 |
| 189 | 0.339 | 476 | 0.731 | 763 | 0.480 |
| 190 | 0.280 | 477 | 0.699 | 764 | 0.432 |
| 191 | 0.234 | 478 | 0.704 | 765 | 0.424 |
| 192 | 0.320 | 479 | 0.722 | 766 | 0.465 |
| 193 | 0.366 | 480 | 0.780 | 767 | 0.440 |
| 194 | 0.459 | 481 | 0.748 | 768 | 0.459 |
| 195 | 0.509 | 482 | 0.826 | 769 | 0.475 |
| 196 | 0.611 | 483 | 0.853 | 770 | 0.497 |
| 197 | 0.690 | 484 | 0.760 | 771 | 0.528 |
| 198 | 0.607 | 485 | 0.836 | 772 | 0.525 |
| 199 | 0.573 | 486 | 0.682 | 773 | 0.549 |
| 200 | 0.633 | 487 | 0.769 | 774 | 0.504 |
| 201 | 0.658 | 488 | 0.755 | 775 | 0.439 |
| 202 | 0.688 | 489 | 0.822 | 776 | 0.456 |
| 203 | 0.658 | 490 | 0.870 | 777 | 0.446 |
| 204 | 0.749 | 491 | 0.715 | 778 | 0.450 |
| 205 | 0.564 | 492 | 0.724 | 779 | 0.418 |
| 206 | 0.673 | 493 | 0.651 | 780 | 0.413 |
| 207 | 0.673 | 494 | 0.463 | 781 | 0.431 |
| 208 | 0.673 | 495 | 0.534 | 782 | 0.392 |
| 209 | 0.765 | 496 | 0.579 | 783 | 0.383 |
| 210 | 0.676 | 497 | 0.656 | 784 | 0.482 |
| 211 | 0.746 | 498 | 0.652 | 785 | 0.512 |
| 212 | 0.601 | 499 | 0.696 | 786 | 0.512 |
| 213 | 0.631 | 500 | 0.727 | 787 | 0.501 |
| 214 | 0.791 | 501 | 0.680 | 788 | 0.407 |
| 215 | 0.652 | 502 | 0.645 | 789 | 0.545 |
| 216 | 0.773 | 503 | 0.673 | 790 | 0.610 |
| 217 | 0.741 | 504 | 0.559 | 791 | 0.594 |
| 218 | 0.697 | 505 | 0.698 | 792 | 0.702 |
| 219 | 0.613 | 506 | 0.548 | 793 | 0.603 |
| 220 | 0.585 | 507 | 0.659 | 794 | 0.689 |
| 221 | 0.727 | 508 | 0.721 | 795 | 0.726 |
| 222 | 0.740 | 509 | 0.671 | 796 | 0.605 |
| 223 | 0.617 | 510 | 0.738 | 797 | 0.524 |
| 224 | 0.769 | 511 | 0.672 | 798 | 0.482 |
| 225 | 0.660 | 512 | 0.673 | 799 | 0.456 |
| 226 | 0.723 | 513 | 0.611 | 800 | 0.361 |
| 227 | 0.738 | 514 | 0.631 | 801 | 0.412 |
| 228 | 0.737 | 515 | 0.541 | 802 | 0.425 |
| 229 | 0.565 | 516 | 0.649 | 803 | 0.429 |
| 230 | 0.628 | 517 | 0.638 | 804 | 0.461 |
| 231 | 0.714 | 518 | 0.685 | 805 | 0.518 |
| 232 | 0.521 | 519 | 0.790 | 806 | 0.521 |
| 233 | 0.561 | 520 | 0.782 | 807 | 0.515 |
| 234 | 0.617 | 521 | 0.695 | 808 | 0.511 |
| 235 | 0.615 | 522 | 0.793 | 809 | 0.439 |
| 236 | 0.734 | 523 | 0.721 | 810 | 0.574 |
| 237 | 0.698 | 524 | 0.698 | 811 | 0.496 |
| 238 | 0.728 | 525 | 0.783 | 812 | 0.564 |
| 239 | 0.738 | 526 | 0.782 | 813 | 0.708 |
| 240 | 0.769 | 527 | 0.663 | 814 | 0.693 |
| 241 | 0.785 | 528 | 0.724 | 815 | 0.694 |
| 242 | 0.712 | 529 | 0.734 | 816 | 0.723 |
| 243 | 0.734 | 530 | 0.759 | 817 | 0.686 |
| 244 | 0.574 | 531 | 0.766 | 818 | 0.643 |
| 245 | 0.662 | 532 | 0.810 | 819 | 0.714 |
| 246 | 0.658 | 533 | 0.878 | 820 | 0.678 |
| 247 | 0.538 | 534 | 0.801 | 821 | 0.707 |
| 248 | 0.779 | 535 | 0.813 | 822 | 0.694 |
| 249 | 0.673 | 536 | 0.817 | 823 | 0.742 |
| 250 | 0.693 | 537 | 0.752 | 824 | 0.661 |
| 251 | 0.706 | 538 | 0.591 | 825 | 0.753 |
| 252 | 0.648 | 539 | 0.665 | 826 | 0.784 |
| 253 | 0.741 | 540 | 0.686 | 827 | 0.689 |
| 254 | 0.707 | 541 | 0.657 | 828 | 0.694 |
| 255 | 0.778 | 542 | 0.698 | 829 | 0.625 |
| 256 | 0.693 | 543 | 0.655 | 830 | 0.582 |
| 257 | 0.622 | 544 | 0.733 | 831 | 0.529 |
| 258 | 0.635 | 545 | 0.676 | 832 | 0.579 |
| 259 | 0.605 | 546 | 0.762 | 833 | 0.605 |
| 260 | 0.715 | 547 | 0.757 | 834 | 0.667 |
| 261 | 0.763 | 548 | 0.795 | 835 | 0.622 |
| 262 | 0.615 | 549 | 0.748 | 836 | 0.603 |
| 263 | 0.751 | 550 | 0.654 | 837 | 0.684 |
| 264 | 0.666 | 551 | 0.675 | 838 | 0.641 |
| 265 | 0.708 | 552 | 0.562 | 839 | 0.664 |
| 266 | 0.726 | 553 | 0.574 | 840 | 0.590 |
| 267 | 0.729 | 554 | 0.593 | 841 | 0.541 |
| 268 | 0.555 | 555 | 0.686 | 842 | 0.529 |
| 269 | 0.656 | 556 | 0.677 | 843 | 0.568 |
| 270 | 0.719 | 557 | 0.682 | 844 | 0.594 |
| 271 | 0.524 | 558 | 0.682 | 845 | 0.634 |
| 272 | 0.625 | 559 | 0.687 | 846 | 0.531 |
| 273 | 0.604 | 560 | 0.728 | 847 | 0.586 |
| 274 | 0.586 | 561 | 0.663 | 848 | 0.546 |
| 275 | 0.559 | 562 | 0.821 | 849 | 0.438 |
| 276 | 0.753 | 563 | 0.810 | 850 | 0.521 |
| 277 | 0.641 | 564 | 0.796 | 851 | 0.564 |
| 278 | 0.675 | 565 | 0.797 | 852 | 0.562 |
| 279 | 0.753 | 566 | 0.750 | 853 | 0.562 |
| 280 | 0.634 | 567 | 0.752 | 854 | 0.612 |
| 281 | 0.639 | 568 | 0.732 | 855 | 0.484 |
| 282 | 0.768 | 569 | 0.746 | 856 | 0.499 |
| 283 | 0.700 | 570 | 0.622 | 857 | 0.504 |
| 284 | 0.790 | 571 | 0.601 | 858 | 0.461 |
| 285 | 0.696 | 572 | 0.630 | 859 | 0.386 |
| 286 | 0.770 | 573 | 0.662 | 860 | 0.387 |
| 287 | 0.779 | 574 | 0.784 |  |  |

Table S5: Pik values of each characteristic.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Conservation range | | nCk(Pi=0) | nCk(Pi=1) | Pik |
| 0.300 | 0.418 | 7 | 4 | 0.364 |
| 0.418 | 0.533 | 11 | 7 | 0.389 |
| 0.533 | 0.647 | 23 | 61 | 0.726 |
| 0.647 | 0.762 | 12 | 285 | 0.960 |
| 0.762 | 0.881 | 1 | 141 | 0.993 |
| Charge modification | |  |  |  |
| A | | 1 | 3 | 0.750 |
| B | | 0 | 3 | 1.000 |
| C | | 7 | 30 | 0.811 |
| E | | 2 | 21 | 0.913 |
| F | | 1 | 10 | 0.909 |
| G | | 3 | 69 | 0.958 |
| I | | 6 | 60 | 0.909 |
| J | | 1 | 18 | 0.947 |
| K | | 33 | 284 | 0.896 |
| Protein domain | |  |  |  |
| Signal sequence | | 2 | 4 | 0.667 |
| LBD | | 16 | 210 | 0.929 |
| EGF-A | | 2 | 34 | 0.944 |
| EGF-B | | 6 | 34 | 0.850 |
| β-propeller | | 15 | 166 | 0.917 |
| EGF-C | | 2 | 31 | 0.939 |
| O-linked | | 5 | 7 | 0.583 |
| Intermembrane | | 5 | 4 | 0.444 |
| Cytosolic | | 1 | 8 | 0.889 |
| Size change range | |  |  |  |
| -168 | -102 | 2 | 14 | 0.875 |
| -102 | -35 | 8 | 110 | 0.932 |
| -35 | 32 | 29 | 180 | 0.861 |
| 32 | 99 | 12 | 164 | 0.932 |
| 99 | 168 | 2 | 28 | 0.933 |
| Hydrophobicity change range | |  |  |  |
| -8.5 | -4.8 | 2 | 57 | 0.966 |
| -4.8 | -1.6 | 17 | 158 | 0.903 |
| -1.6 | 1.6 | 20 | 124 | 0.861 |
| 1.6 | 4.8 | 11 | 94 | 0.895 |
| 4.8 | 8.5 | 2 | 39 | 0.951 |
| Original amino acid | |  |  |  |
| Ala | | 4 | 16 | 0.800 |
| Arg | | 6 | 20 | 0.769 |
| Asn | | 1 | 12 | 0.923 |
| Asp | | 4 | 77 | 0.951 |
| Cys | | 0 | 148 | 1.000 |
| Gln | | 1 | 8 | 0.889 |
| Glu | | 2 | 23 | 0.920 |
| Gly | | 5 | 37 | 0.881 |
| His | | 1 | 8 | 0.889 |
| Ile | | 4 | 17 | 0.810 |
| Leu | | 0 | 23 | 1.000 |
| Lys | | 1 | 8 | 0.889 |
| Met | | 2 | 5 | 0.714 |
| Phe | | 1 | 11 | 0.917 |
| Pro | | 2 | 21 | 0.913 |
| Ser | | 6 | 19 | 0.760 |
| Thr | | 6 | 8 | 0.571 |
| Trp | | 0 | 16 | 1.000 |
| Tyr | | 0 | 12 | 1.000 |
| Val | | 8 | 9 | 0.529 |
| Substituting amino acid | |  |  |  |
| Ala | | 1 | 12 | 0.923 |
| Arg | | 4 | 48 | 0.923 |
| Asn | | 6 | 22 | 0.786 |
| Asp | | 1 | 18 | 0.947 |
| Cys | | 0 | 23 | 1.000 |
| Gln | | 0 | 10 | 1.000 |
| Glu | | 1 | 13 | 0.929 |
| Gly | | 7 | 51 | 0.879 |
| His | | 2 | 18 | 0.900 |
| Ile | | 4 | 6 | 0.600 |
| Leu | | 3 | 15 | 0.833 |
| Lys | | 3 | 18 | 0.857 |
| Met | | 3 | 4 | 0.571 |
| Phe | | 1 | 36 | 0.973 |
| Pro | | 0 | 23 | 1.000 |
| Ser | | 8 | 49 | 0.860 |
| Thr | | 4 | 24 | 0.857 |
| Trp | | 2 | 22 | 0.917 |
| Tyr | | 1 | 51 | 0.981 |
| Val | | 3 | 35 | 0.921 |

nCk(Pi=0)=Number of benign variants on a class c on each category Ck  nCk(Pi=1)=Number of pathogenic variants on a class c on each category Ck  Pik= probabilities with which pathogenic protein variants (Pi = 1) in the dataset present a given value of the characteristic Ck within a given class c A= positive to positive B=positive to negative C=positive to no charge E=negative to positive F=negative to negative G=negative to no charge I=no charge to positive J=no charge to negative K=no charge to no charge

Excel Solver Evolutionary Algorithm (ESEA)

Excel Solver acts on a group of cells that are directly or indirectly related to the objective function. Modifying the value of those variables, it is able to optimize the target cell value, increasing or decreasing it. The objective of this step was to optimize the number of correctly predicted mutations modifying the adjustable values ek coefficients. Excel solver has three resolution methods: GRG Nonlinear, Simplex LP and Evolutionary. The Excel Solver Evolutionary Algorithm method was used, since it was the one that best fits this problem. ESEA applies the principles of evolution found in nature, giving random values at first, mutating or changing them and picking the best offspring to start again. That randomness makes the algorithm nondeterministic, so each new run can yield different solution, and it can be an infinite process, since it has no concept of an optimal solution. However, it also helps avoiding local optimum values, as the algorithm uses different populations (7). Several trials with different starting values were performed to bypass non-optimum local maximum values and the one with the best score was chosen. Overall, ESEA is the most fitting options for problems in which it is difficult to test the optimality of the results.

ESEA EGS strategy

In some classes with few cases (such as signal sequence, with only 6 variants affecting this subdomain on training group) the number of characterized variants may not be large enough to obtain a real probability value. Due to that, some Pik values were increased or decreased depending on their effect on the number of correctly predicted variants. This process was called ESEA Expert-Guided Selection (EGS). Eventually, an additional ESEA was performed. This combination of modification and ESEA was carried out several times, only on the training step, until no improvement was achieved. The obtained ek values were used in the model and the validation. 39 additional pathogenic and 2 additional benign variants were correctly predicted after the optimization. The final probability distribution of pathogenicity values of each characteristic is shown in the Table S6. The final weights of each characteristic and the pathogenicity threshold are shown in the Table S7.

Table S6: EGS modified Pik values of each characteristic.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Conservation range | | nCk(Pi=0) | nCk(Pi=1) | Pik |
| 0.300 | 0.418 | 7 | 4 | 0.364 |
| 0.418 | 0.533 | 11 | 7 | 0.450\* |
| 0.533 | 0.647 | 23 | 61 | 0.726 |
| 0.647 | 0.762 | 12 | 285 | 0.960 |
| 0.762 | 0.881 | 1 | 141 | 0.993 |
| Charge modification | |  |  |  |
| A | | 1 | 3 | 0.980\* |
| B | | 0 | 3 | 1.000 |
| C | | 7 | 30 | 0.811 |
| E | | 2 | 21 | 0.913 |
| F | | 1 | 10 | 0.909 |
| G | | 3 | 69 | 0.958 |
| I | | 6 | 60 | 0.909 |
| J | | 1 | 18 | 1.000\* |
| K | | 33 | 284 | 0.896 |
| Protein domain | |  |  |  |
| Signal sequence | | 2 | 4 | 1.000\* |
| LBD | | 16 | 210 | 0.929 |
| EGF-A | | 2 | 34 | 0.944 |
| EGF-B | | 6 | 34 | 0.850 |
| β-propeller | | 15 | 166 | 0.917 |
| EGF-C | | 2 | 31 | 0.939 |
| O-linked | | 5 | 7 | 1.000\* |
| Intermembrane | | 5 | 4 | 1.000\* |
| Cytosolic | | 1 | 8 | 1.000\* |
| Size change range | |  |  |  |
| -168 | -102 | 2 | 14 | 0.875 |
| -102 | -35 | 8 | 110 | 0.932 |
| -35 | 32 | 29 | 180 | 0.861 |
| 32 | 99 | 12 | 164 | 0.932 |
| 99 | 168 | 2 | 28 | 0.933 |
| Hydrophobicity change range | |  |  |  |
| -8.5 | -4.8 | 2 | 57 | 0.966 |
| -4.8 | -1.6 | 17 | 158 | 0.903 |
| -1.6 | 1.6 | 20 | 124 | 0.861 |
| 1.6 | 4.8 | 11 | 94 | 0.895 |
| 4.8 | 8.5 | 2 | 39 | 0.951 |
| Original amino acid | |  |  |  |
| Ala | | 4 | 16 | 0.800 |
| Arg | | 6 | 20 | 0.769 |
| Asn | | 1 | 12 | 0.923 |
| Asp | | 4 | 77 | 0.951 |
| Cys | | 0 | 148 | 1.000 |
| Gln | | 1 | 8 | 0.889 |
| Glu | | 2 | 23 | 0.920 |
| Gly | | 5 | 37 | 0.881 |
| His | | 1 | 8 | 0.850\* |
| Ile | | 4 | 17 | 0.810 |
| Leu | | 0 | 23 | 1.000 |
| Lys | | 1 | 8 | 0.889 |
| Met | | 2 | 5 | 0.714 |
| Phe | | 1 | 11 | 0.890\* |
| Pro | | 2 | 21 | 1.000\* |
| Ser | | 6 | 19 | 0.810\* |
| Thr | | 6 | 8 | 0.900\* |
| Trp | | 0 | 16 | 1.000 |
| Tyr | | 0 | 12 | 1.000 |
| Val | | 8 | 9 | 0.680\* |
| Substituting amino acid | |  |  |  |
| Ala | | 1 | 12 | 1.000\* |
| Arg | | 4 | 48 | 0.923 |
| Asn | | 6 | 22 | 0.786 |
| Asp | | 1 | 18 | 0.947 |
| Cys | | 0 | 23 | 1.000 |
| Gln | | 0 | 10 | 1.000 |
| Glu | | 1 | 13 | 0.929 |
| Gly | | 7 | 51 | 0.879 |
| His | | 2 | 18 | 0.900 |
| Ile | | 4 | 6 | 0.770\* |
| Leu | | 3 | 15 | 0.833 |
| Lys | | 3 | 18 | 0.857 |
| Met | | 3 | 4 | 0.700\* |
| Phe | | 1 | 36 | 0.973 |
| Pro | | 0 | 23 | 1.000 |
| Ser | | 8 | 49 | 0.860 |
| Thr | | 4 | 24 | 1.000\* |
| Trp | | 2 | 22 | 0.917 |
| Tyr | | 1 | 51 | 0.981 |
| Val | | 3 | 35 | 0.950\* |

Modified Pik values are marked with an \*. nCk(Pi=0)=Number of benign variants on a class c on each category Ck  nCk(Pi=1)=Number of pathogenic variants on a class c on each category Ck  Pik= probabilities with which pathogenic protein variants (Pi = 1) in the dataset present a given value of the characteristic Ck within a given class c A= positive to positive B=positive to negative C=positive to no charge E=negative to positive F=negative to negative G=negative to no charge I=no charge to positive J=no charge to negative K=no charge to no charge

Table S7: ek coefficient values

|  |  |
| --- | --- |
| Coefficient (ek) | Value |
| Threshold (e0) | 0.666 |
| Conservation (e1) | 0.082 |
| Charge (e2) | 0.132 |
| Original aa (e3) | 0.093 |
| Substituting aa (e4) | 0.088 |
| Hydrophobicity (e5) | 0.165 |
| Size (e6) | 0.115 |
| Affected domain (e7) | 0.077 |

Table S8: The Top-5 pathogenic and benign variant predictions on Training and Validation.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ClinVar code | Variation | f(Pi)obs | f(Pi)pred | p(Pi = 1)pred (%) | Set |
| NM\_000527.4(LDLR):c.683A>C p.(Glu228Ala) | Glu228Ala | P | P | 85.39 | T |
| NM\_000527.4(LDLR):c.1664T>C p.(Leu555Pro) | Leu555Pro | P | P | 85.87 | T |
| NM\_000527.4(LDLR):c.1703T>C p.(Leu568Pro) | Leu568Pro | P | P | 85.87 | T |
| NM\_000527.4(LDLR):c.1745T>C p.(Leu582Pro) | Leu582Pro | P | P | 85.87 | T |
| NM\_000527.4(LDLR):c.1814T>C p.(Leu605Pro) | Leu605Pro | P | P | 85.87 | T |
| NM\_001195803.2(LDLR):c.1606+194T>C p.(Leu682Pro) | Leu682Pro | P | P | 87.03 | V |
| NM\_000527.4(LDLR):c.1436T>C p.(Leu479Pro) | Leu479Pro | P | P | 85.87 | V |
| NM\_000527.4(LDLR):c.1223A>C p.(Glu408Ala) | Glu408Ala | P | P | 84.76 | V |
| NM\_000527.4(LDLR):c.904T>C p.(Cys302Arg) | Cys302Arg | P | P | 83.57 | V |
| NM\_000527.4(LDLR):c.1860G>C p.(Trp620Cys) | Trp620Cys | P | P | 82.91 | V |
| NM\_000527.4(LDLR):c.2364G>T p.(Arg788Ser) | Arg788Ser | B | B | 18.79 | T |
| NM\_000527.4(LDLR):c.1A>T p.(Met1Leu) | Met1Leu | P | B | 18.73 | T |
| NM\_000527.4(LDLR):c.2155G>C p.(Val719Leu) | Val719Leu | B | B | 12.55 | T |
| NM\_000527.4(LDLR):c.3G>A p.(Met1Ile) | Met1Ile | P | B | 9.96 | T |
| NM\_001195803.2(LDLR):c.1606+148T>A p.(Val271Ile) | Val271Ile | P | B | 5.08 | T |
| NM\_000527.4(LDLR):c.370C>G p.(Arg124Gly) | Arg124Gly | B | B | 26.56 | V |
| NM\_001195800.2(LDLR):c.314-1792G>T p.(Ala223Ser) | Ala232Ser | B | B | 22.61 | V |
| NM\_000527.4(LDLR):c.1A>G p.(Met1Val) | Met1Val | P | B | 20.67 | V |
| NM\_000527.4(LDLR):c.1384G>A p.(Val462Ile) | Val462Ile | B | B | 19.76 | V |
| NM\_000527.4(LDLR):c.2398G>A p.(Val800Ile) | Val800Ile | B | B | 4.00 | V |

f(Pi)obs=Clinical significance based on ClinVar f(Pi)pred=Pathogenicity predicted by MLb-LDLr p(Pi=1)pred= Probability of being Pathogenic (%) based on MLb-LDLr

Table S9: MLb-LDLr predictions of ClinVar LDLr missense variants.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Clinvar code | Variation | Ref | f(Pi)obs | f(Pi)pred | p(Pi = 1)pred (%) | Set |
| NM\_000527.4(LDLR):c.1022C>G (p.Pro341Arg) | Pro341Arg |  | B | P | 69.73 | T |
| NM\_000527.4(LDLR):c.1024G>A (p.Asp342Asn) | Asp342Asn | (8) | B | B | 39.79 | T |
| NM\_000527.4(LDLR):c.1063A>G (p.Ile355Val) | Ile355Val |  | B | B | 49.89 | T |
| NM\_000527.4(LDLR):c.1078G>C (p.Asp360His) | Asp360His | (9) | B | B | 48.01 | T |
| NM\_000527.4(LDLR):c.1088C>A (p.Thr363Asn) | Thr363Asn |  | B | B | 48.62 | T |
| NM\_000527.4(LDLR):c.1120\_1121delinsTC (p.Gly374Ser) | Gly374Ser |  | B | B | 47.16 | T |
| NM\_000527.4(LDLR):c.1171G>A (p.Ala391Thr) | Ala391Thr |  | B | B | 45.64 | T |
| NM\_000527.4(LDLR):c.1186G>A (p.Gly396Ser) | Gly396Ser | (10) | B | B | 37.73 | T |
| NM\_000527.4(LDLR):c.1189T>A (p.Ser397Thr) | Ser397Thr |  | B | B | 41.62 | V |
| NM\_000527.4(LDLR):c.1236G>A (p.Met412Ile) | Met412Ile |  | B | B | 25.73 | V |
| NM\_000527.4(LDLR):c.1244A>G (p.Asp415Gly) | Asp415Gly |  | B | P | 75.69 | T |
| NM\_000527.4(LDLR):c.1376C>G (p.Ala459Gly) | Ala459Gly |  | B | B | 40.89 | T |
| NM\_000527.4(LDLR):c.1384G>A (p.Val462Ile) | Val462Ile |  | B | B | 19.77 | V |
| NM\_000527.4(LDLR):c.1400C>T (p.Thr467Ile) | Thr467Ile |  | B | B | 49.12 | V |
| NM\_000527.4(LDLR):c.1402G>A (p.Val468Ile) | Val468Ile | (8) | B | B | 19.77 | T |
| NM\_000527.4(LDLR):c.1411A>G (p.Arg471Gly) | Arg471Gly |  | B | B | 25.93 | T |
| NM\_000527.4(LDLR):c.1417A>G (p.Ile473Val) | Ile473Val |  | B | B | 38.61 | V |
| NM\_000527.4(LDLR):c.1456A>G (p.Ser486Gly) | Ser486Gly |  | B | B | 49.80 | V |
| NM\_000527.4(LDLR):c.1457G>A (p.Ser486Asn) | Ser486Asn |  | B | B | 46.47 | T |
| NM\_000527.4(LDLR):c.147C>A (p.Ser49Arg) | Ser49Arg |  | B | B | 48.98 | T |
| NM\_000527.4(LDLR):c.148G>T (p.Ala50Ser) | Ala50Ser | (11) | B | B | 37.93 | V |
| NM\_000527.4(LDLR):c.1492G>T (p.Val498Phe) | Val498Phe |  | B | P | 50.25 | T |
| NM\_000527.4(LDLR):c.1538G>A (p.Arg513Lys) | Arg513Lys |  | B | B | 38.08 | V |
| NM\_000527.4(LDLR):c.1612A>T (p.Thr538Ser) | Thr538Ser |  | B | B | 38.93 | T |
| NM\_000527.4(LDLR):c.1715G>A (p.Ser572Asn) | Ser572Asn |  | B | B | 33.53 | T |
| NM\_000527.4(LDLR):c.1792A>C (p.Ile598Leu) | Ile598Leu |  | B | B | 31.68 | T |
| NM\_000527.4(LDLR):c.1802A>G (p.Asp601Gly) | Asp601Gly |  | B | P | 62.75 | T |
| NM\_000527.4(LDLR):c.1808A>G (p.Lys603Arg) | Lys603Arg |  | B | B | 49.53 | V |
| NM\_000527.4(LDLR):c.1809G>C (p.Lys603Asn) | Lys603Asn |  | B | B | 33.88 | T |
| NM\_000527.4(LDLR):c.1825T>C (p.Phe609Leu) | Phe609Leu |  | B | B | 49.68 | V |
| NM\_000527.4(LDLR):c.1834G>T (p.Ala612Ser) | Ala612Ser |  | B | P | 50.24 | T |
| NM\_000527.4(LDLR):c.185C>T (p.Thr62Met) | Thr62Met | (12) | B | B | 39.35 | T |
| NM\_000527.4(LDLR):c.1954A>G (p.Met652Val) | Met652Val |  | B | B | 37.60 | T |
| NM\_000527.4(LDLR):c.1976C>A (p.Thr659Asn) | Thr659Asn |  | B | B | 40.36 | V |
| NM\_000527.4(LDLR):c.2113G>T (p.Ala705Ser) | Ala705Ser |  | B | B | 41.64 | T |
| NM\_000527.4(LDLR):c.211G>A (p.Gly71Arg) | Gly71Arg |  | B | B | 38.25 | V |
| NM\_000527.4(LDLR):c.2155G>C (p.Val719Leu) | Val719Leu |  | B | B | 12.56 | T |
| NM\_000527.4(LDLR):c.2171C>T (p.Thr724Ile) | Thr724Ile |  | B | B | 38.15 | T |
| NM\_000527.4(LDLR):c.2177C>T (p.Thr726Ile) | Thr726Ile | (11) | B | B | 33.36 | T |
| NM\_000527.4(LDLR):c.2209A>G (p.Arg737Gly) | Arg737Gly |  | B | B | 25.48 | T |
| NM\_000527.4(LDLR):c.2224A>G (p.Thr742Ala) | Thr742Ala |  | B | B | 40.11 | V |
| NM\_000527.4(LDLR):c.2260G>A (p.Gly754Arg) | Gly754Arg |  | B | B | 37.17 | T |
| NM\_000527.4(LDLR):c.2289G>T (p.Glu763Asp) | Glu763Asp |  | B | B | 43.74 | T |
| NM\_000527.4(LDLR):c.2291T>C (p.Ile764Thr) | Ile764Thr |  | B | B | 49.98 | T |
| NM\_000527.4(LDLR):c.2294T>G (p.Val765Gly) | Val765Gly |  | B | B | 30.02 | T |
| NM\_000527.4(LDLR):c.2364G>T (p.Arg788Ser) | Arg788Ser |  | B | B | 18.79 | T |
| NM\_000527.4(LDLR):c.2398G>A (p.Val800Ile) | Val800Ile |  | B | B | 4.00 | V |
| NM\_000527.4(LDLR):c.2398G>A (p.Val800Ile) | Val800Ile |  | B | B | 4.00 | V |
| NM\_000527.4(LDLR):c.2417T>A (p.Val806Asp) | Val806Asp |  | B | B | 40.36 | V |
| NM\_000527.4(LDLR):c.2479G>A (p.Val827Ile) | Val827Ile | (13) | B | B | 37.05 | T |
| NM\_000527.4(LDLR):c.250C>T (p.Pro84Ser) | Pro84Ser |  | B | P | 58.79 | T |
| NM\_000527.4(LDLR):c.370C>G (p.Arg124Gly) | Arg124Gly |  | B | B | 26.57 | V |
| NM\_000527.4(LDLR):c.373C>A (p.Gln125Lys) | Gln125Lys |  | B | B | 24.58 | T |
| NM\_000527.4(LDLR):c.434T>C (p.Val145Ala) | Val145Ala |  | B | B | 31.07 | T |
| NM\_000527.4(LDLR):c.451G>A (p.Ala151Thr) | Ala151Thr |  | B | B | 46.28 | V |
| NM\_000527.4(LDLR):c.4G>A (p.Gly2Arg) | Gly2Arg |  | B | B | 37.17 | T |
| NM\_000527.4(LDLR):c.53C>T (p.Ala18Val) | Ala18Val |  | B | B | 31.53 | V |
| NM\_000527.4(LDLR):c.548G>A (p.Arg183His) | Arg183His |  | B | B | 41.26 | T |
| NM\_000527.4(LDLR):c.58G>A (p.Gly20Arg) | Gly20Arg | (14) | B | B | 37.17 | V |
| NM\_000527.4(LDLR):c.59G>A (p.Gly20Glu) | Gly20Glu |  | B | B | 45.51 | T |
| NM\_000527.4(LDLR):c.757C>T (p.Arg253Trp) | Arg253Trp | (8) | B | B | 49.34 | T |
| NM\_000527.4(LDLR):c.769C>T (p.Arg257Trp) | Arg257Trp |  | B | B | 36.39 | T |
| NM\_000527.4(LDLR):c.820A>T (p.Thr274Ser) | Thr274Ser |  | B | B | 39.56 | T |
| NM\_000527.4(LDLR):c.829G>A (p.Glu277Lys) | Glu277Lys | (15) | B | B | 42.21 | T |
| NM\_000527.4(LDLR):c.855C>A (p.His285Gln) | His285Gln |  | B | P | 50.22 | V |
| NM\_000527.4(LDLR):c.929T>C (p.Ile310Thr) | Ile310Thr |  | B | P | 75.32 | T |
| NM\_000527.4(LDLR):c.970G>A (p.Gly324Ser) | Gly324Ser | (8) | B | P | 52.11 | V |
| NM\_000527.4(LDLR):c.990T>A (p.Asn330Lys) | Asn330Lys |  | B | B | 48.32 | T |
| NM\_001195798.2(LDLR):c.1261A>G (p.Ser421Gly) | Ser421Gly |  | B | B | 21.55 | T |
| NM\_001195800.2(LDLR):c.314-1792G>T | Ala232Ser |  | B | B | 22.62 | V |
| NM\_001195800.2(LDLR):c.314-1886C>A | Phe200Leu |  | B | B | 37.37 | T |
| NM\_001195800.2(LDLR):c.314-1902G>A | Ser195Asn |  | B | B | 18.85 | T |
| NM\_001195800.2(LDLR):c.314-1921G>A | Val189Met |  | B | B | 0.79 | T |
| NM\_001195800.2(LDLR):c.314-2010C>T | Thr159Ile |  | B | P | 49.75 | V |
| NM\_001195800.2(LDLR):c.314-2098T>A | Ser130Thr |  | B | B | 26.94 | T |
| NM\_001195800.2(LDLR):c.314-2119T>A | Ser123Thr |  | B | B | 42.25 | V |
| NM\_001195800.2(LDLR):c.314-2137C>T | His117Tyr |  | B | B | 45.41 | T |
| NM\_001195800.2(LDLR):c.314-732A>G | Met264Val |  | B | P | 50.00 | T |
| NM\_001195800.2(LDLR):c.314-750G>A | Glu258Lys |  | B | B | 42.21 | V |
| NM\_001195800.2(LDLR):c.314-752G>T | Arg257Leu |  | B | B | 32.21 | V |
| NM\_001195803.2(LDLR):c.1606+139G>A | Val664Met |  | B | B | 21.43 | T |
| NM\_000527.4(LDLR):c.1004G>A (p.Gly335Asp) | Gly335Asp |  | P | P | 71.82 | T |
| NM\_000527.4(LDLR):c.1004G>T (p.Gly335Val) | Gly335Val |  | P | P | 61.81 | T |
| NM\_000527.4(LDLR):c.1007A>G (p.Tyr336Cys) | Tyr336Cys |  | P | P | 61.51 | T |
| NM\_000527.4(LDLR):c.100T>G (p.Cys34Gly) | Cys34Gly |  | P | P | 76.54 | T |
| NM\_000527.4(LDLR):c.1012T>A (p.Cys338Ser) | Cys338Ser |  | P | P | 59.30 | T |
| NM\_000527.4(LDLR):c.1012T>C (p.Cys338Arg) | Cys338Arg |  | P | P | 76.78 | T |
| NM\_000527.4(LDLR):c.1012T>G (p.Cys338Gly) | Cys338Gly |  | P | P | 70.55 | V |
| NM\_000527.4(LDLR):c.1013G>A (p.Cys338Tyr) | Cys338Tyr |  | P | P | 71.98 | T |
| NM\_000527.4(LDLR):c.1013G>T (p.Cys338Phe) | Cys338Phe |  | P | P | 66.86 | T |
| NM\_000527.4(LDLR):c.1016T>C (p.Leu339Pro) | Leu339Pro |  | P | P | 69.42 | V |
| NM\_000527.4(LDLR):c.101G>C (p.Cys34Ser) | Cys34Ser |  | P | P | 65.30 | T |
| NM\_000527.4(LDLR):c.1020C>G (p.Cys340Trp) | Cys340Trp |  | P | P | 68.28 | T |
| NM\_000527.4(LDLR):c.1027G>A (p.Gly343Ser) | Gly343Ser | (16) | P | B | 47.16 | T |
| NM\_000527.4(LDLR):c.1027G>T (p.Gly343Cys) | Gly343Cys |  | P | P | 64.78 | V |
| NM\_000527.4(LDLR):c.1028G>A (p.Gly343Asp) | Gly343Asp |  | P | P | 71.82 | T |
| NM\_000527.4(LDLR):c.1028G>T (p.Gly343Val) | Gly343Val |  | P | P | 61.81 | T |
| NM\_000527.4(LDLR):c.1054T>A (p.Cys352Ser) | Cys352Ser |  | P | P | 61.15 | T |
| NM\_000527.4(LDLR):c.1054T>C (p.Cys352Arg) | Cys352Arg |  | P | P | 78.63 | V |
| NM\_000527.4(LDLR):c.1055G>A (p.Cys352Tyr) | Cys352Tyr |  | P | P | 73.83 | V |
| NM\_000527.4(LDLR):c.1055G>T (p.Cys352Phe) | Cys352Phe |  | P | P | 68.71 | T |
| NM\_000527.4(LDLR):c.1056C>G (p.Cys352Trp) | Cys352Trp |  | P | P | 70.13 | T |
| NM\_000527.4(LDLR):c.1061A>C (p.Asp354Ala) | Asp354Ala |  | P | P | 77.37 | T |
| NM\_000527.4(LDLR):c.1061A>G (p.Asp354Gly) | Asp354Gly |  | P | P | 74.03 | V |
| NM\_000527.4(LDLR):c.1061A>T (p.Asp354Val) | Asp354Val |  | P | P | 74.40 | T |
| NM\_000527.4(LDLR):c.1067A>C (p.Asp356Ala) | Asp356Ala |  | P | P | 77.37 | T |
| NM\_000527.4(LDLR):c.1067A>T (p.Asp356Val) | Asp356Val |  | P | P | 74.40 | T |
| NM\_000527.4(LDLR):c.1069G>A (p.Glu357Lys) | Glu357Lys | (13) | P | P | 52.85 | T |
| NM\_000527.4(LDLR):c.1070A>G (p.Glu357Gly) | Glu357Gly |  | P | P | 72.10 | T |
| NM\_000527.4(LDLR):c.1072T>C (p.Cys358Arg) | Cys358Arg |  | P | P | 78.63 | T |
| NM\_000527.4(LDLR):c.1073G>A (p.Cys358Tyr) | Cys358Tyr |  | P | P | 73.83 | T |
| NM\_000527.4(LDLR):c.1081C>T (p.Pro361Ser) | Pro361Ser |  | P | P | 54.65 | V |
| NM\_000527.4(LDLR):c.108C>A (p.Asp36Glu) | Asp36Glu |  | P | P | 69.10 | V |
| NM\_000527.4(LDLR):c.1090T>C (p.Cys364Arg) | Cys364Arg | (13) | P | P | 78.63 | T |
| NM\_000527.4(LDLR):c.1091G>A (p.Cys364Tyr) | Cys364Tyr |  | P | P | 73.83 | T |
| NM\_000527.4(LDLR):c.1091G>C (p.Cys364Ser) | Cys364Ser |  | P | P | 61.15 | T |
| NM\_000527.4(LDLR):c.1091G>T (p.Cys364Phe) | Cys364Phe |  | P | P | 68.71 | V |
| NM\_000527.4(LDLR):c.1097A>C (p.Gln366Pro) | Gln366Pro |  | P | P | 61.66 | V |
| NM\_000527.4(LDLR):c.1097A>G (p.Gln366Arg) | Gln366Arg |  | P | P | 54.46 | T |
| NM\_000527.4(LDLR):c.1102T>C (p.Cys368Arg) | Cys368Arg |  | P | P | 78.63 | T |
| NM\_000527.4(LDLR):c.1102T>G (p.Cys368Gly) | Cys368Gly |  | P | P | 72.40 | V |
| NM\_000527.4(LDLR):c.1103G>C (p.Cys368Ser) | Cys368Ser |  | P | P | 61.15 | T |
| NM\_000527.4(LDLR):c.1109A>C (p.Asn370Thr) | Asn370Thr |  | P | P | 63.81 | T |
| NM\_000527.4(LDLR):c.1110C>G (p.Asn370Lys) | Asn370Lys |  | P | P | 58.16 | T |
| NM\_000527.4(LDLR):c.1117G>T (p.Gly373Cys) | Gly373Cys |  | P | P | 64.78 | V |
| NM\_000527.4(LDLR):c.1118G>A (p.Gly373Asp) | Gly373Asp |  | P | P | 71.82 | T |
| NM\_000527.4(LDLR):c.1118G>T (p.Gly373Val) | Gly373Val |  | P | P | 61.81 | T |
| NM\_000527.4(LDLR):c.1124A>C (p.Tyr375Ser) | Tyr375Ser |  | P | P | 65.40 | T |
| NM\_000527.4(LDLR):c.1124A>G (p.Tyr375Cys) | Tyr375Cys |  | P | P | 74.45 | V |
| NM\_000527.4(LDLR):c.1129T>G (p.Cys377Gly) | Cys377Gly |  | P | P | 75.91 | T |
| NM\_000527.4(LDLR):c.1130G>A (p.Cys377Tyr) | Cys377Tyr |  | P | P | 77.34 | T |
| NM\_000527.4(LDLR):c.1130G>C (p.Cys377Ser) | Cys377Ser |  | P | P | 64.67 | V |
| NM\_000527.4(LDLR):c.1130G>T (p.Cys377Phe) | Cys377Phe |  | P | P | 72.22 | T |
| NM\_000527.4(LDLR):c.1135T>C (p.Cys379Arg) | Cys379Arg |  | P | P | 82.14 | T |
| NM\_000527.4(LDLR):c.1135T>G (p.Cys379Gly) | Cys379Gly |  | P | P | 75.91 | T |
| NM\_000527.4(LDLR):c.1136G>A (p.Cys379Tyr) | Cys379Tyr |  | P | P | 77.34 | V |
| NM\_000527.4(LDLR):c.1145G>T (p.Gly382Val) | Gly382Val |  | P | P | 65.32 | T |
| NM\_000527.4(LDLR):c.1151A>C (p.Gln384Pro) | Gln384Pro |  | P | P | 63.33 | T |
| NM\_000527.4(LDLR):c.1154T>C (p.Leu385Pro) | Leu385Pro |  | P | P | 72.93 | T |
| NM\_000527.4(LDLR):c.1154T>G (p.Leu385Arg) | Leu385Arg |  | P | P | 61.88 | T |
| NM\_000527.4(LDLR):c.115T>C (p.Cys39Arg) | Cys39Arg |  | P | P | 82.78 | T |
| NM\_000527.4(LDLR):c.116G>T (p.Cys39Phe) | Cys39Phe |  | P | P | 72.85 | T |
| NM\_000527.4(LDLR):c.1174T>C (p.Cys392Arg) | Cys392Arg |  | P | P | 80.29 | T |
| NM\_000527.4(LDLR):c.1177A>C (p.Lys393Gln) | Lys393Gln |  | P | P | 51.91 | T |
| NM\_000527.4(LDLR):c.1179G>C (p.Lys393Asn) | Lys393Asn |  | P | B | 46.82 | T |
| NM\_000527.4(LDLR):c.1187G>A (p.Gly396Asp) | Gly396Asp |  | P | P | 62.39 | T |
| NM\_000527.4(LDLR):c.1195G>A (p.Ala399Thr) | Ala399Thr |  | P | B | 45.64 | V |
| NM\_000527.4(LDLR):c.1195G>T (p.Ala399Ser) | Ala399Ser |  | P | B | 37.30 | T |
| NM\_000527.4(LDLR):c.1196C>A (p.Ala399Asp) | Ala399Asp |  | P | P | 58.88 | T |
| NM\_000527.4(LDLR):c.1202T>A (p.Leu401His) | Leu401His |  | P | P | 73.45 | T |
| NM\_000527.4(LDLR):c.1205T>C (p.Phe402Ser) | Phe402Ser |  | P | P | 63.56 | T |
| NM\_000527.4(LDLR):c.1207T>C (p.Phe403Leu) | Phe403Leu |  | P | B | 49.68 | T |
| NM\_000527.4(LDLR):c.1210A>T (p.Thr404Ser) | Thr404Ser |  | P | P | 53.72 | T |
| NM\_000527.4(LDLR):c.1211C>T (p.Thr404Ile) | Thr404Ile |  | P | P | 63.91 | V |
| NM\_000527.4(LDLR):c.1215C>G (p.Asn405Lys) | Asn405Lys |  | P | P | 59.83 | T |
| NM\_000527.4(LDLR):c.1216C>T (p.Arg406Trp) | Arg406Trp |  | P | P | 50.55 | T |
| NM\_000527.4(LDLR):c.1217G>C (p.Arg406Pro) | Arg406Pro |  | P | P | 57.69 | T |
| NM\_000527.4(LDLR):c.1222G>A (p.Glu408Lys) | Glu408Lys |  | P | P | 54.52 | T |
| NM\_000527.4(LDLR):c.1222G>C (p.Glu408Gln) | Glu408Gln |  | P | P | 67.06 | T |
| NM\_000527.4(LDLR):c.1223A>C (p.Glu408Ala) | Glu408Ala |  | P | P | 84.77 | V |
| NM\_000527.4(LDLR):c.1223A>T (p.Glu408Val) | Glu408Val |  | P | P | 74.14 | T |
| NM\_000527.4(LDLR):c.1230G>T (p.Arg410Ser) | Arg410Ser |  | P | B | 47.50 | T |
| NM\_000527.4(LDLR):c.1231A>G (p.Lys411Glu) | Lys411Glu |  | P | P | 51.65 | V |
| NM\_000527.4(LDLR):c.1234A>C (p.Met412Leu) | Met412Leu |  | P | B | 29.50 | T |
| NM\_000527.4(LDLR):c.1235T>C (p.Met412Thr) | Met412Thr |  | P | B | 47.91 | T |
| NM\_000527.4(LDLR):c.1241T>G (p.Leu414Arg) | Leu414Arg |  | P | P | 61.88 | V |
| NM\_000527.4(LDLR):c.1243G>C (p.Asp415His) | Asp415His |  | P | P | 64.46 | T |
| NM\_000527.4(LDLR):c.1246C>T (p.Arg416Trp) | Arg416Trp |  | P | B | 48.70 | T |
| NM\_000527.4(LDLR):c.1247G>A (p.Arg416Gln) | Arg416Gln |  | P | B | 44.38 | T |
| NM\_000527.4(LDLR):c.1247G>C (p.Arg416Pro) | Arg416Pro |  | P | P | 55.84 | V |
| NM\_000527.4(LDLR):c.1247G>T (p.Arg416Leu) | Arg416Leu |  | P | B | 44.52 | T |
| NM\_000527.4(LDLR):c.1252G>A (p.Glu418Lys) | Glu418Lys |  | P | P | 54.52 | V |
| NM\_000527.4(LDLR):c.1255T>C (p.Tyr419His) | Tyr419His |  | P | P | 74.05 | V |
| NM\_000527.4(LDLR):c.1255T>G (p.Tyr419Asp) | Tyr419Asp |  | P | P | 85.00 | T |
| NM\_000527.4(LDLR):c.1256A>G (p.Tyr419Cys) | Tyr419Cys |  | P | P | 77.97 | T |
| NM\_000527.4(LDLR):c.1265T>C (p.Leu422Pro) | Leu422Pro |  | P | P | 72.93 | T |
| NM\_000527.4(LDLR):c.1268T>C (p.Ile423Thr) | Ile423Thr |  | P | P | 60.95 | T |
| NM\_000527.4(LDLR):c.1269C>G (p.Ile423Met) | Ile423Met |  | P | B | 28.41 | T |
| NM\_000527.4(LDLR):c.1285G>A (p.Val429Met) | Val429Met |  | P | B | 20.26 | T |
| NM\_000527.4(LDLR):c.1285G>T (p.Val429Leu) | Val429Leu |  | P | B | 23.53 | T |
| NM\_000527.4(LDLR):c.1291G>A (p.Ala431Thr) | Ala431Thr |  | P | P | 58.59 | T |
| NM\_000527.4(LDLR):c.1291G>C (p.Ala431Pro) | Ala431Pro |  | P | P | 58.59 | T |
| NM\_000527.4(LDLR):c.1295T>C (p.Leu432Pro) | Leu432Pro |  | P | P | 85.87 | T |
| NM\_000527.4(LDLR):c.1297G>C (p.Asp433His) | Asp433His |  | P | P | 66.31 | T |
| NM\_000527.4(LDLR):c.1297G>T (p.Asp433Tyr) | Asp433Tyr |  | P | P | 78.97 | T |
| NM\_000527.4(LDLR):c.1315A>T (p.Asn439Tyr) | Asn439Tyr |  | P | P | 56.86 | T |
| NM\_000527.4(LDLR):c.1322T>A (p.Ile441Asn) | Ile441Asn |  | P | P | 61.15 | T |
| NM\_000527.4(LDLR):c.1322T>C (p.Ile441Thr) | Ile441Thr |  | P | P | 73.89 | T |
| NM\_000527.4(LDLR):c.1323C>G (p.Ile441Met) | Ile441Met |  | P | B | 41.35 | V |
| NM\_000527.4(LDLR):c.1324T>A (p.Tyr442Asn) | Tyr442Asn |  | P | P | 67.93 | T |
| NM\_000527.4(LDLR):c.1324T>C (p.Tyr442His) | Tyr442His |  | P | P | 75.90 | T |
| NM\_000527.4(LDLR):c.1325A>G (p.Tyr442Cys) | Tyr442Cys |  | P | P | 79.82 | T |
| NM\_000527.4(LDLR):c.1329G>T (p.Trp443Cys) | Trp443Cys |  | P | P | 82.92 | T |
| NM\_000527.4(LDLR):c.1330T>C (p.Ser444Pro) | Ser444Pro |  | P | P | 54.56 | T |
| NM\_000527.4(LDLR):c.1335C>A (p.Asp445Glu) | Asp445Glu |  | P | P | 70.32 | V |
| NM\_000527.4(LDLR):c.1339T>C (p.Ser447Pro) | Ser447Pro |  | P | P | 54.56 | T |
| NM\_000527.4(LDLR):c.1340C>G (p.Ser447Cys) | Ser447Cys |  | P | P | 58.36 | V |
| NM\_000527.4(LDLR):c.1342C>A (p.Gln448Lys) | Gln448Lys |  | P | P | 52.21 | T |
| NM\_000527.4(LDLR):c.1351A>T (p.Ile451Phe) | Ile451Phe |  | P | P | 57.58 | T |
| NM\_000527.4(LDLR):c.1352T>C (p.Ile451Thr) | Ile451Thr |  | P | P | 73.89 | T |
| NM\_000527.4(LDLR):c.1361C>A (p.Thr454Asn) | Thr454Asn |  | P | P | 52.13 | T |
| NM\_000527.4(LDLR):c.1367T>A (p.Leu456His) | Leu456His |  | P | P | 60.51 | T |
| NM\_000527.4(LDLR):c.136T>G (p.Cys46Gly) | Cys46Gly |  | P | P | 76.54 | V |
| NM\_000527.4(LDLR):c.137G>A (p.Cys46Tyr) | Cys46Tyr |  | P | P | 77.97 | T |
| NM\_000527.4(LDLR):c.137G>C (p.Cys46Ser) | Cys46Ser |  | P | P | 65.30 | T |
| NM\_000527.4(LDLR):c.139G>C (p.Asp47His) | Asp47His |  | P | P | 66.94 | T |
| NM\_000527.4(LDLR):c.1408A>G (p.Ser470Gly) | Ser470Gly |  | P | B | 36.86 | T |
| NM\_000527.4(LDLR):c.1412G>A (p.Arg471Lys) | Arg471Lys |  | P | B | 22.77 | T |
| NM\_000527.4(LDLR):c.1414G>T (p.Asp472Tyr) | Asp472Tyr | (17) | P | P | 64.18 | T |
| NM\_000527.4(LDLR):c.1424C>T (p.Ala475Val) | Ala475Val |  | P | P | 60.23 | T |
| NM\_000527.4(LDLR):c.1426C>T (p.Pro476Ser) | Pro476Ser |  | P | P | 58.16 | T |
| NM\_000527.4(LDLR):c.1427C>T (p.Pro476Leu) | Pro476Leu |  | P | P | 72.12 | T |
| NM\_000527.4(LDLR):c.1433G>A (p.Gly478Glu) | Gly478Glu |  | P | P | 74.21 | V |
| NM\_000527.4(LDLR):c.1436T>C (p.Leu479Pro) | Leu479Pro |  | P | P | 85.87 | V |
| NM\_000527.4(LDLR):c.1438G>A (p.Ala480Thr) | Ala480Thr |  | P | P | 60.43 | T |
| NM\_000527.4(LDLR):c.1438G>C (p.Ala480Pro) | Ala480Pro |  | P | P | 60.43 | V |
| NM\_000527.4(LDLR):c.1439C>T (p.Ala480Val) | Ala480Val |  | P | P | 62.08 | T |
| NM\_000527.4(LDLR):c.1441G>A (p.Val481Met) | Val481Met |  | P | B | 33.20 | V |
| NM\_000527.4(LDLR):c.1444G>A (p.Asp482Asn) | Asp482Asn |  | P | P | 58.10 | T |
| NM\_000527.4(LDLR):c.1444G>C (p.Asp482His) | Asp482His |  | P | P | 66.31 | T |
| NM\_000527.4(LDLR):c.1444G>T (p.Asp482Tyr) | Asp482Tyr |  | P | P | 78.97 | T |
| NM\_000527.4(LDLR):c.1445A>G (p.Asp482Gly) | Asp482Gly |  | P | P | 77.54 | V |
| NM\_000527.4(LDLR):c.1447T>C (p.Trp483Arg) | Trp483Arg |  | P | P | 77.27 | T |
| NM\_000527.4(LDLR):c.1448G>T (p.Trp483Leu) | Trp483Leu |  | P | P | 69.91 | T |
| NM\_000527.4(LDLR):c.1449G>C (p.Trp483Cys) | Trp483Cys |  | P | P | 82.92 | V |
| NM\_000527.4(LDLR):c.1454A>G (p.His485Arg) | His485Arg |  | P | P | 62.00 | T |
| NM\_000527.4(LDLR):c.1463T>A (p.Ile488Asn) | Ile488Asn |  | P | P | 61.15 | V |
| NM\_000527.4(LDLR):c.1463T>G (p.Ile488Ser) | Ile488Ser |  | P | P | 65.55 | T |
| NM\_000527.4(LDLR):c.1466A>G (p.Tyr489Cys) | Tyr489Cys |  | P | P | 79.82 | V |
| NM\_000527.4(LDLR):c.1468T>C (p.Trp490Arg) | Trp490Arg |  | P | P | 77.27 | T |
| NM\_000527.4(LDLR):c.1468T>G (p.Trp490Gly) | Trp490Gly |  | P | P | 74.36 | T |
| NM\_000527.4(LDLR):c.1469G>T (p.Trp490Leu) | Trp490Leu |  | P | P | 69.91 | V |
| NM\_000527.4(LDLR):c.1472C>A (p.Thr491Asn) | Thr491Asn |  | P | P | 52.13 | T |
| NM\_000527.4(LDLR):c.1474G>C (p.Asp492His) | Asp492His |  | P | P | 64.46 | V |
| NM\_000527.4(LDLR):c.1475A>G (p.Asp492Gly) | Asp492Gly |  | P | P | 75.69 | T |
| NM\_000527.4(LDLR):c.1487G>T (p.Gly496Val) | Gly496Val |  | P | P | 52.38 | T |
| NM\_000527.4(LDLR):c.1489A>C (p.Thr497Pro) | Thr497Pro |  | P | P | 60.22 | V |
| NM\_000527.4(LDLR):c.1495T>C (p.Ser499Pro) | Ser499Pro | (18) | P | P | 54.56 | T |
| NM\_000527.4(LDLR):c.1502C>A (p.Ala501Glu) | Ala501Glu |  | P | P | 76.18 | T |
| NM\_000527.4(LDLR):c.1502C>T (p.Ala501Val) | Ala501Val |  | P | P | 60.23 | V |
| NM\_000527.4(LDLR):c.1514G>A (p.Gly505Asp) | Gly505Asp |  | P | P | 75.33 | T |
| NM\_000527.4(LDLR):c.1520A>C (p.Lys507Thr) | Lys507Thr |  | P | P | 63.37 | T |
| NM\_000527.4(LDLR):c.1521G>C (p.Lys507Asn) | Lys507Asn |  | P | B | 46.82 | T |
| NM\_000527.4(LDLR):c.1525A>G (p.Lys509Glu) | Lys509Glu |  | P | P | 64.59 | T |
| NM\_000527.4(LDLR):c.1529C>T (p.Thr510Met) | Thr510Met |  | P | P | 51.66 | T |
| NM\_000527.4(LDLR):c.1532T>C (p.Leu511Ser) | Leu511Ser |  | P | P | 70.47 | T |
| NM\_000527.4(LDLR):c.1555C>A (p.Pro519Thr) | Pro519Thr |  | P | P | 68.36 | V |
| NM\_000527.4(LDLR):c.1555C>T (p.Pro519Ser) | Pro519Ser |  | P | P | 60.01 | T |
| NM\_000527.4(LDLR):c.1558A>G (p.Arg520Gly) | Arg520Gly |  | P | P | 56.04 | T |
| NM\_000527.4(LDLR):c.155G>A (p.Cys52Tyr) | Cys52Tyr |  | P | P | 76.12 | T |
| NM\_000527.4(LDLR):c.1567G>A (p.Val523Met) | Val523Met |  | P | B | 33.20 | T |
| NM\_000527.4(LDLR):c.1571T>G (p.Val524Gly) | Val524Gly |  | P | P | 53.94 | T |
| NM\_000527.4(LDLR):c.1574A>T (p.Asp525Val) | Asp525Val |  | P | P | 77.91 | T |
| NM\_000527.4(LDLR):c.1576C>A (p.Pro526Thr) | Pro526Thr |  | P | P | 68.36 | T |
| NM\_000527.4(LDLR):c.1577C>G (p.Pro526Arg) | Pro526Arg |  | P | P | 75.09 | T |
| NM\_000527.4(LDLR):c.1586G>A (p.Gly529Asp) | Gly529Asp |  | P | P | 75.33 | T |
| NM\_000527.4(LDLR):c.1592T>G (p.Met531Arg) | Met531Arg |  | P | P | 58.71 | T |
| NM\_000527.4(LDLR):c.1595A>G (p.Tyr532Cys) | Tyr532Cys |  | P | P | 79.82 | V |
| NM\_000527.4(LDLR):c.1597T>C (p.Trp533Arg) | Trp533Arg |  | P | P | 77.27 | T |
| NM\_000527.4(LDLR):c.1601C>A (p.Thr534Asn) | Thr534Asn |  | P | P | 53.98 | T |
| NM\_000527.4(LDLR):c.1603G>A (p.Asp535Asn) | Asp535Asn |  | P | P | 58.10 | T |
| NM\_000527.4(LDLR):c.1603G>T (p.Asp535Tyr) | Asp535Tyr |  | P | P | 78.97 | T |
| NM\_000527.4(LDLR):c.1606T>G (p.Trp536Gly) | Trp536Gly |  | P | P | 74.36 | T |
| NM\_000527.4(LDLR):c.1618G>A (p.Ala540Thr) | Ala540Thr |  | P | P | 58.59 | T |
| NM\_000527.4(LDLR):c.1625T>G (p.Ile542Ser) | Ile542Ser |  | P | P | 65.55 | T |
| NM\_000527.4(LDLR):c.1633G>C (p.Gly545Arg) | Gly545Arg |  | P | P | 65.87 | V |
| NM\_000527.4(LDLR):c.1633G>T (p.Gly545Trp) | Gly545Trp |  | P | P | 59.65 | T |
| NM\_000527.4(LDLR):c.1636G>C (p.Gly546Arg) | Gly546Arg |  | P | P | 65.87 | T |
| NM\_000527.4(LDLR):c.1637G>A (p.Gly546Asp) | Gly546Asp |  | P | P | 75.33 | T |
| NM\_000527.4(LDLR):c.1637G>T (p.Gly546Val) | Gly546Val |  | P | P | 65.32 | V |
| NM\_000527.4(LDLR):c.1644T>G (p.Asn548Lys) | Asn548Lys |  | P | P | 61.68 | T |
| NM\_000527.4(LDLR):c.1646G>A (p.Gly549Asp) | Gly549Asp |  | P | P | 75.33 | T |
| NM\_000527.4(LDLR):c.1646G>T (p.Gly549Val) | Gly549Val |  | P | P | 65.32 | T |
| NM\_000527.4(LDLR):c.1664T>C (p.Leu555Pro) | Leu555Pro |  | P | P | 85.87 | T |
| NM\_000527.4(LDLR):c.166T>C (p.Ser56Pro) | Ser56Pro |  | P | P | 55.19 | V |
| NM\_000527.4(LDLR):c.1678A>T (p.Ile560Phe) | Ile560Phe |  | P | P | 57.58 | T |
| NM\_000527.4(LDLR):c.1687C>T (p.Pro563Ser) | Pro563Ser |  | P | P | 60.01 | V |
| NM\_000527.4(LDLR):c.1688C>A (p.Pro563His) | Pro563His |  | P | P | 69.06 | T |
| NM\_000527.4(LDLR):c.1690A>G (p.Asn564Asp) | Asn564Asp |  | P | P | 69.70 | T |
| NM\_000527.4(LDLR):c.1694G>A (p.Gly565Asp) | Gly565Asp |  | P | P | 77.18 | V |
| NM\_000527.4(LDLR):c.1694G>C (p.Gly565Ala) | Gly565Ala |  | P | P | 64.68 | T |
| NM\_000527.4(LDLR):c.1694G>T (p.Gly565Val) | Gly565Val |  | P | P | 67.17 | T |
| NM\_000527.4(LDLR):c.169G>A (p.Asp57Asn) | Asp57Asn |  | P | P | 58.73 | T |
| NM\_000527.4(LDLR):c.1702C>G (p.Leu568Val) | Leu568Val |  | P | P | 63.53 | V |
| NM\_000527.4(LDLR):c.1703T>C (p.Leu568Pro) | Leu568Pro |  | P | P | 85.87 | T |
| NM\_000527.4(LDLR):c.1705G>A (p.Asp569Asn) | Asp569Asn |  | P | P | 56.25 | V |
| NM\_000527.4(LDLR):c.1705G>T (p.Asp569Tyr) | Asp569Tyr |  | P | P | 77.12 | T |
| NM\_000527.4(LDLR):c.1723C>T (p.Leu575Phe) | Leu575Phe |  | P | P | 64.90 | T |
| NM\_000527.4(LDLR):c.1727A>C (p.Tyr576Ser) | Tyr576Ser |  | P | P | 70.77 | T |
| NM\_000527.4(LDLR):c.1727A>G (p.Tyr576Cys) | Tyr576Cys |  | P | P | 79.82 | T |
| NM\_000527.4(LDLR):c.1729T>C (p.Trp577Arg) | Trp577Arg |  | P | P | 77.27 | T |
| NM\_000527.4(LDLR):c.1729T>G (p.Trp577Gly) | Trp577Gly |  | P | P | 74.36 | T |
| NM\_000527.4(LDLR):c.172G>A (p.Glu58Lys) | Glu58Lys |  | P | P | 55.15 | T |
| NM\_000527.4(LDLR):c.1730G>C (p.Trp577Ser) | Trp577Ser |  | P | P | 70.77 | T |
| NM\_000527.4(LDLR):c.1731G>C (p.Trp577Cys) | Trp577Cys |  | P | P | 82.92 | V |
| NM\_000527.4(LDLR):c.1733T>C (p.Val578Ala) | Val578Ala |  | P | P | 60.54 | T |
| NM\_000527.4(LDLR):c.1735G>A (p.Asp579Asn) | Asp579Asn |  | P | P | 58.10 | T |
| NM\_000527.4(LDLR):c.1735G>T (p.Asp579Tyr) | Asp579Tyr |  | P | P | 78.97 | T |
| NM\_000527.4(LDLR):c.1736A>C (p.Asp579Ala) | Asp579Ala |  | P | P | 80.89 | T |
| NM\_000527.4(LDLR):c.1736A>G (p.Asp579Gly) | Asp579Gly |  | P | P | 77.54 | T |
| NM\_000527.4(LDLR):c.1737C>G (p.Asp579Glu) | Asp579Glu |  | P | P | 70.32 | V |
| NM\_000527.4(LDLR):c.1738T>C (p.Ser580Pro) | Ser580Pro |  | P | P | 56.41 | T |
| NM\_000527.4(LDLR):c.173A>G (p.Glu58Gly) | Glu58Gly |  | P | P | 74.40 | T |
| NM\_000527.4(LDLR):c.1743A>T (p.Lys581Asn) | Lys581Asn |  | P | B | 48.67 | V |
| NM\_000527.4(LDLR):c.1744C>T (p.Leu582Phe) | Leu582Phe |  | P | P | 64.90 | T |
| NM\_000527.4(LDLR):c.1745T>C (p.Leu582Pro) | Leu582Pro |  | P | P | 85.87 | T |
| NM\_000527.4(LDLR):c.1747C>G (p.His583Asp) | His583Asp |  | P | P | 72.89 | T |
| NM\_000527.4(LDLR):c.1747C>T (p.His583Tyr) | His583Tyr | (19) | P | P | 59.57 | T |
| NL\_000527.4(LDLR):c.1748A>G (p.His583Arg) | His583Arg |  | P | P | 62.00 | V |
| NL\_000527.4(LDLR):c.1749C>G (p.His583Gln) | His583Gln |  | P | P | 51.44 | T |
| NL\_000527.4(LDLR):c.1754T>A (p.Ile585Asn) | Ile585Asn |  | P | P | 61.15 | V |
| NL\_000527.4(LDLR):c.1754T>C (p.Ile585Thr) | Ile585Thr |  | P | P | 73.89 | T |
| NL\_000527.4(LDLR):c.1774G>A (p.Gly592Arg) | Gly592Arg |  | P | P | 67.72 | T |
| NL\_000527.4(LDLR):c.1775G>A (p.Gly592Glu) | Gly592Glu |  | P | P | 76.06 | T |
| NL\_000527.4(LDLR):c.1784G>T (p.Arg595Leu) | Arg595Leu |  | P | B | 46.37 | V |
| NL\_000527.4(LDLR):c.1796T>G (p.Leu599Trp) | Leu599Trp |  | P | P | 71.68 | V |
| NL\_000527.4(LDLR):c.1801G>T (p.Asp601Tyr) | Asp601Tyr |  | P | P | 64.18 | V |
| NL\_000527.4(LDLR):c.1802A>T (p.Asp601Val) | Asp601Val |  | P | P | 63.12 | T |
| NL\_000527.4(LDLR):c.1814T>C (p.Leu605Pro) | Leu605Pro |  | P | P | 85.87 | T |
| NL\_000527.4(LDLR):c.1817C>A (p.Ala606Asp) | Ala606Asp |  | P | P | 71.82 | T |
| NL\_000527.4(LDLR):c.1820A>G (p.His607Arg) | His607Arg |  | P | P | 62.00 | V |
| NL\_000527.4(LDLR):c.1822C>A (p.Pro608Thr) | Pro608Thr |  | P | P | 68.36 | V |
| NL\_000527.4(LDLR):c.1822C>T (p.Pro608Ser) | Pro608Ser |  | P | P | 60.01 | T |
| NL\_000527.4(LDLR):c.1823C>G (p.Pro608Arg) | Pro608Arg |  | P | P | 75.09 | T |
| NL\_000527.4(LDLR):c.1823C>T (p.Pro608Leu) | Pro608Leu |  | P | P | 73.97 | T |
| NL\_000527.4(LDLR):c.1829C>G (p.Ser610Cys) | Ser610Cys |  | P | P | 58.36 | T |
| NL\_000527.4(LDLR):c.1829C>T (p.Ser610Phe) | Ser610Phe |  | P | P | 62.35 | T |
| NL\_000527.4(LDLR):c.1833G>T (p.Leu611Phe) | Leu611Phe |  | P | P | 64.90 | T |
| NL\_000527.4(LDLR):c.1835C>T (p.Ala612Val) | Ala612Val |  | P | P | 60.23 | T |
| NL\_000527.4(LDLR):c.1844A>T (p.Glu615Val) | Glu615Val |  | P | P | 75.99 | T |
| NL\_000527.4(LDLR):c.1853T>G (p.Val618Gly) | Val618Gly |  | P | P | 55.79 | V |
| NL\_000527.4(LDLR):c.1856T>C (p.Phe619Ser) | Phe619Ser |  | P | P | 65.41 | V |
| NL\_000527.4(LDLR):c.1856T>G (p.Phe619Cys) | Phe619Cys |  | P | P | 69.09 | T |
| NL\_000527.4(LDLR):c.1858T>C (p.Trp620Arg) | Trp620Arg |  | P | P | 77.27 | T |
| NL\_000527.4(LDLR):c.185C>G (p.Thr62Arg) | Thr62Arg |  | P | P | 54.64 | V |
| NL\_000527.4(LDLR):c.1860G>C (p.Trp620Cys) | Trp620Cys |  | P | P | 82.92 | V |
| NL\_000527.4(LDLR):c.1862C>G (p.Thr621Arg) | Thr621Arg |  | P | P | 66.95 | T |
| NL\_000527.4(LDLR):c.1864G>A (p.Asp622Asn) | Asp622Asn |  | P | P | 56.25 | T |
| NL\_000527.4(LDLR):c.1865A>C (p.Asp622Ala) | Asp622Ala |  | P | P | 79.04 | T |
| NL\_000527.4(LDLR):c.1879G>A (p.Ala627Thr) | Ala627Thr |  | P | B | 45.64 | T |
| NL\_000527.4(LDLR):c.187T>C (p.Cys63Arg) | Cys63Arg |  | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.1880C>A (p.Ala627Asp) | Ala627Asp |  | P | P | 58.88 | V |
| NL\_000527.4(LDLR):c.1880C>T (p.Ala627Val) | Ala627Val |  | P | B | 47.29 | T |
| NL\_000527.4(LDLR):c.1883T>C (p.Ile628Thr) | Ile628Thr |  | P | P | 60.95 | T |
| NL\_000527.4(LDLR):c.1886T>G (p.Phe629Cys) | Phe629Cys |  | P | P | 54.30 | T |
| NL\_000527.4(LDLR):c.188G>A (p.Cys63Tyr) | Cys63Tyr | (20) | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.188G>T (p.Cys63Phe) | Cys63Phe |  | P | P | 71.00 | T |
| NL\_000527.4(LDLR):c.1892C>A (p.Ala631Asp) | Ala631Asp |  | P | P | 71.82 | T |
| NL\_000527.4(LDLR):c.1897C>T (p.Arg633Cys) | Arg633Cys |  | P | P | 62.09 | T |
| NL\_000527.4(LDLR):c.1898G>T (p.Arg633Leu) | Arg633Leu |  | P | B | 44.52 | T |
| NL\_000527.4(LDLR):c.1904C>T (p.Thr635Ile) | Thr635Ile |  | P | B | 49.12 | T |
| NL\_000527.4(LDLR):c.1906G>A (p.Gly636Ser) | Gly636Ser |  | P | B | 37.73 | V |
| NL\_000527.4(LDLR):c.1907G>T (p.Gly636Val) | Gly636Val |  | P | P | 52.38 | T |
| NL\_000527.4(LDLR):c.1916T>G (p.Val639Gly) | Val639Gly |  | P | B | 41.00 | T |
| NL\_000527.4(LDLR):c.1925T>C (p.Leu642Ser) | Leu642Ser |  | P | P | 57.53 | T |
| NL\_000527.4(LDLR):c.1936C>A (p.Leu646Ile) | Leu646Ile |  | P | P | 54.00 | T |
| NL\_000527.4(LDLR):c.1937T>A (p.Leu646Gln) | Leu646Gln |  | P | P | 79.38 | V |
| NL\_000527.4(LDLR):c.1942T>C (p.Ser648Pro) | Ser648Pro |  | P | B | 42.78 | T |
| NL\_000527.4(LDLR):c.1942T>G (p.Ser648Ala) | Ser648Ala |  | P | B | 46.59 | V |
| NL\_000527.4(LDLR):c.1943C>T (p.Ser648Phe) | Ser648Phe |  | P | P | 50.57 | T |
| NL\_000527.4(LDLR):c.1945C>T (p.Pro649Ser) | Pro649Ser |  | P | P | 59.33 | T |
| NL\_000527.4(LDLR):c.1951G>T (p.Asp651Tyr) | Asp651Tyr |  | P | P | 65.34 | V |
| NL\_000527.4(LDLR):c.1952A>T (p.Asp651Val) | Asp651Val |  | P | P | 64.29 | T |
| NL\_000527.4(LDLR):c.1968C>G (p.His656Gln) | His656Gln |  | P | P | 50.75 | T |
| NL\_000527.4(LDLR):c.1973T>C (p.Leu658Pro) | Leu658Pro |  | P | P | 74.10 | T |
| NL\_000527.4(LDLR):c.1978C>A (p.Gln660Lys) | Gln660Lys |  | P | P | 53.37 | V |
| NL\_000527.4(LDLR):c.1979A>C (p.Gln660Pro) | Gln660Pro |  | P | P | 64.49 | T |
| NL\_000527.4(LDLR):c.1979A>G (p.Gln660Arg) | Gln660Arg |  | P | P | 57.29 | T |
| NL\_000527.4(LDLR):c.1988G>C (p.Gly663Ala) | Gly663Ala |  | P | P | 51.05 | T |
| NL\_000527.4(LDLR):c.1999T>C (p.Cys667Arg) | Cys667Arg |  | P | P | 68.52 | T |
| NL\_000527.4(LDLR):c.1A>G (p.Met1Val) | Met1Val |  | P | B | 20.67 | V |
| NL\_000527.4(LDLR):c.1A>T (p.Met1Leu) | Met1Leu |  | P | B | 13.73 | T |
| NL\_000527.4(LDLR):c.2000G>A (p.Cys667Tyr) | Cys667Tyr |  | P | P | 63.71 | T |
| NL\_000527.4(LDLR):c.2001T>G (p.Cys667Trp) | Cys667Trp |  | P | P | 60.02 | T |
| NL\_000527.4(LDLR):c.2026G>C (p.Gly676Arg) | Gly676Arg |  | P | P | 67.04 | V |
| NL\_000527.4(LDLR):c.2026G>T (p.Gly676Cys) | Gly676Cys |  | P | P | 69.46 | T |
| NL\_000527.4(LDLR):c.2029T>C (p.Cys677Arg) | Cys677Arg |  | P | P | 81.46 | V |
| NL\_000527.4(LDLR):c.202T>C (p.Cys68Arg) | Cys68Arg | (21) | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.2030G>T (p.Cys677Phe) | Cys677Phe |  | P | P | 71.54 | T |
| NL\_000527.4(LDLR):c.2042G>A (p.Cys681Tyr) | Cys681Tyr |  | P | P | 76.65 | T |
| NL\_000527.4(LDLR):c.2044C>T (p.Leu682Phe) | Leu682Phe |  | P | P | 66.06 | T |
| NL\_000527.4(LDLR):c.2053C>A (p.Pro685Thr) | Pro685Thr |  | P | P | 67.67 | T |
| NL\_000527.4(LDLR):c.2054C>T (p.Pro685Leu) | Pro685Leu |  | P | P | 73.28 | T |
| NL\_000527.4(LDLR):c.2056C>G (p.Gln686Glu) | Gln686Glu |  | P | P | 52.81 | T |
| NL\_000527.4(LDLR):c.2087G>A (p.Cys696Tyr) | Cys696Tyr |  | P | P | 78.50 | T |
| NL\_000527.4(LDLR):c.2089G>A (p.Ala697Thr) | Ala697Thr |  | P | P | 59.75 | T |
| NL\_000527.4(LDLR):c.2093G>A (p.Cys698Tyr) | Cys698Tyr |  | P | P | 78.50 | V |
| NL\_000527.4(LDLR):c.2093G>T (p.Cys698Phe) | Cys698Phe |  | P | P | 73.39 | T |
| NL\_000527.4(LDLR):c.2120A>T (p.Asp707Val) | Asp707Val |  | P | P | 67.46 | T |
| NL\_000527.4(LDLR):c.2125A>G (p.Arg709Gly) | Arg709Gly |  | P | P | 58.52 | T |
| NL\_000527.4(LDLR):c.2131T>G (p.Cys711Gly) | Cys711Gly |  | P | P | 78.40 | T |
| NL\_000527.4(LDLR):c.2132G>A (p.Cys711Tyr) | Cys711Tyr |  | P | P | 79.83 | V |
| NL\_000527.4(LDLR):c.2132G>T (p.Cys711Phe) | Cys711Phe |  | P | P | 74.71 | T |
| NL\_000527.4(LDLR):c.2140G>C (p.Glu714Gln) | Glu714Gln |  | P | B | 38.36 | V |
| NL\_000527.4(LDLR):c.223T>A (p.Cys75Ser) | Cys75Ser |  | P | P | 65.30 | T |
| NL\_000527.4(LDLR):c.224G>A (p.Cys75Tyr) | Cys75Tyr |  | P | P | 77.97 | T |
| NL\_000527.4(LDLR):c.2260G>T (p.Gly754Trp) | Gly754Trp |  | P | B | 30.95 | T |
| NL\_000527.4(LDLR):c.232C>T (p.Arg78Cys) | Arg78Cys |  | P | P | 49.78 | V |
| NL\_000527.4(LDLR):c.2396T>G (p.Leu799Arg) | Leu799Arg |  | P | P | 50.91 | T |
| NL\_000527.4(LDLR):c.2407T>C (p.Cys803Arg) | Cys803Arg |  | P | P | 56.38 | V |
| NL\_000527.4(LDLR):c.2413G>A (p.Gly805Arg) | Gly805Arg |  | P | B | 41.95 | T |
| NL\_000527.4(LDLR):c.241C>T (p.Arg81Cys) | Arg81Cys | (21) | P | P | 49.78 | T |
| NL\_000527.4(LDLR):c.2422C>G (p.Leu808Val) | Leu808Val |  | P | B | 39.62 | T |
| NL\_000527.4(LDLR):c.2446A>C (p.Lys816Gln) | Lys816Gln |  | P | P | 56.24 | T |
| NL\_000527.4(LDLR):c.244T>G (p.Cys82Gly) | Cys82Gly |  | P | P | 74.69 | T |
| NL\_000527.4(LDLR):c.245G>A (p.Cys82Tyr) | Cys82Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.245G>T (p.Cys82Phe) | Cys82Phe |  | P | P | 71.00 | T |
| NL\_000527.4(LDLR):c.2473A>G (p.Asn825Asp) | Asn825Asp |  | P | P | 72.19 | V |
| NL\_000527.4(LDLR):c.2475C>A (p.Asn825Lys) | Asn825Lys |  | P | P | 64.16 | T |
| NL\_000527.4(LDLR):c.2476C>A (p.Pro826Thr) | Pro826Thr |  | P | P | 72.69 | T |
| NL\_000527.4(LDLR):c.2476C>T (p.Pro826Ser) | Pro826Ser |  | P | P | 64.35 | T |
| NL\_000527.4(LDLR):c.2479G>T (p.Val827Phe) | Val827Phe |  | P | P | 54.58 | T |
| NL\_000527.4(LDLR):c.2482T>C (p.Tyr828His) | Tyr828His |  | P | P | 78.39 | T |
| NL\_000527.4(LDLR):c.2483A>C (p.Tyr828Ser) | Tyr828Ser |  | P | P | 73.26 | T |
| NL\_000527.4(LDLR):c.2483A>G (p.Tyr828Cys) | Tyr828Cys |  | P | P | 82.31 | V |
| NL\_000527.4(LDLR):c.248T>C (p.Ile83Thr) | Ile83Thr |  | P | P | 74.53 | T |
| NL\_000527.4(LDLR):c.251C>T (p.Pro84Leu) | Pro84Leu |  | P | P | 72.75 | T |
| NL\_000527.4(LDLR):c.2530G>A (p.Gly844Ser) | Gly844Ser |  | P | B | 42.07 | T |
| NL\_000527.4(LDLR):c.2531G>A (p.Gly844Asp) | Gly844Asp |  | P | P | 66.73 | V |
| NL\_000527.4(LDLR):c.259T>C (p.Trp87Arg) | Trp87Arg |  | P | P | 77.91 | T |
| NL\_000527.4(LDLR):c.259T>G (p.Trp87Gly) | Trp87Gly |  | P | P | 74.99 | T |
| NL\_000527.4(LDLR):c.262A>G (p.Arg88Gly) | Arg88Gly |  | P | P | 54.82 | T |
| NL\_000527.4(LDLR):c.263G>A (p.Arg88Lys) | Arg88Lys |  | P | P | 51.66 | V |
| NL\_000527.4(LDLR):c.265T>C (p.Cys89Arg) | Cys89Arg |  | P | P | 82.78 | V |
| NL\_000527.4(LDLR):c.265T>G (p.Cys89Gly) | Cys89Gly |  | P | P | 76.54 | T |
| NL\_000527.4(LDLR):c.266G>A (p.Cys89Tyr) | Cys89Tyr |  | P | P | 77.97 | T |
| NL\_000527.4(LDLR):c.268G>A (p.Asp90Asn) | Asp90Asn | (22) | P | P | 56.88 | V |
| NL\_000527.4(LDLR):c.268G>T (p.Asp90Tyr) | Asp90Tyr |  | P | P | 77.75 | T |
| NL\_000527.4(LDLR):c.269A>C (p.Asp90Ala) | Asp90Ala |  | P | P | 79.67 | T |
| NL\_000527.4(LDLR):c.269A>G (p.Asp90Gly) | Asp90Gly |  | P | P | 76.32 | T |
| NL\_000527.4(LDLR):c.270T>A (p.Asp90Glu) | Asp90Glu |  | P | P | 69.10 | T |
| NL\_000527.4(LDLR):c.283T>C (p.Cys95Arg) | Cys95Arg |  | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.283T>G (p.Cys95Gly) | Cys95Gly | (23) | P | P | 74.69 | T |
| NL\_000527.4(LDLR):c.284G>T (p.Cys95Phe) | Cys95Phe |  | P | P | 71.00 | T |
| NL\_000527.4(LDLR):c.28T>A (p.Trp10Arg) | Trp10Arg |  | P | P | 51.51 | T |
| NL\_000527.4(LDLR):c.291C>G (p.Asn97Lys) | Asn97Lys |  | P | P | 60.46 | T |
| NL\_000527.4(LDLR):c.292G>A (p.Gly98Ser) | Gly98Ser |  | P | P | 51.31 | T |
| NL\_000527.4(LDLR):c.298G>A (p.Asp100Asn) | Asp100Asn | (24) | P | P | 56.88 | T |
| NL\_000527.4(LDLR):c.299A>G (p.Asp100Gly) | Asp100Gly |  | P | P | 76.32 | T |
| NL\_000527.4(LDLR):c.300C>A (p.Asp100Glu) | Asp100Glu |  | P | P | 69.10 | V |
| NL\_000527.4(LDLR):c.301G>A (p.Glu101Lys) | Glu101Lys |  | P | P | 55.15 | T |
| NL\_000527.4(LDLR):c.311G>A (p.Cys104Tyr) | Cys104Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.311G>C (p.Cys104Ser) | Cys104Ser |  | P | P | 63.45 | T |
| NL\_000527.4(LDLR):c.326G>A (p.Cys109Tyr) | Cys109Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.326G>T (p.Cys109Phe) | Cys109Phe |  | P | P | 71.00 | T |
| NL\_000527.4(LDLR):c.344G>A (p.Arg115His) | Arg115His | (22) | P | P | 54.21 | T |
| NL\_000527.4(LDLR):c.346T>C (p.Cys116Arg) | Cys116Arg |  | P | P | 80.93 | T |
| NL\_000527.4(LDLR):c.355G>A (p.Gly119Arg) | Gly119Arg |  | P | P | 66.50 | T |
| NL\_000527.4(LDLR):c.361T>C (p.Cys121Arg) | Cys121Arg |  | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.362G>A (p.Cys121Tyr) | Cys121Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.363C>G (p.Cys121Trp) | Cys121Trp |  | P | P | 72.43 | V |
| NL\_000527.4(LDLR):c.377T>C (p.Phe126Ser) | Phe126Ser |  | P | P | 64.19 | V |
| NL\_000527.4(LDLR):c.380T>G (p.Val127Gly) | Val127Gly |  | P | B | 41.63 | V |
| NL\_000527.4(LDLR):c.382T>C (p.Cys128Arg) | Cys128Arg |  | P | P | 80.93 | T |
| NL\_000527.4(LDLR):c.383G>A (p.Cys128Tyr) | Cys128Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.383G>C (p.Cys128Ser) | Cys128Ser |  | P | P | 63.45 | V |
| NL\_000527.4(LDLR):c.391G>C (p.Asp131His) | Asp131His |  | P | P | 52.15 | T |
| NL\_000527.4(LDLR):c.3G>A (p.Met1Ile) | Met1Ile |  | P | B | 9.97 | T |
| NL\_000527.4(LDLR):c.400T>C (p.Cys134Arg) | Cys134Arg |  | P | P | 80.93 | T |
| NL\_000527.4(LDLR):c.400T>G (p.Cys134Gly) | Cys134Gly |  | P | P | 74.69 | T |
| NL\_000527.4(LDLR):c.401G>T (p.Cys134Phe) | Cys134Phe |  | P | P | 71.00 | V |
| NL\_000527.4(LDLR):c.407A>T (p.Asp136Val) | Asp136Val |  | P | P | 76.70 | T |
| NL\_000527.4(LDLR):c.409G>A (p.Gly137Ser) | Gly137Ser |  | P | P | 51.31 | V |
| NL\_000527.4(LDLR):c.409G>T (p.Gly137Cys) | Gly137Cys |  | P | P | 68.93 | T |
| NL\_000527.4(LDLR):c.415G>A (p.Asp139Asn) | Asp139Asn |  | P | P | 56.88 | T |
| NL\_000527.4(LDLR):c.416A>G (p.Asp139Gly) | Asp139Gly |  | P | P | 76.32 | V |
| NL\_000527.4(LDLR):c.416A>T (p.Asp139Val) | Asp139Val |  | P | P | 76.70 | T |
| NL\_000527.4(LDLR):c.417C>G (p.Asp139Glu) | Asp139Glu |  | P | P | 69.10 | T |
| NL\_000527.4(LDLR):c.418G>A (p.Glu140Lys) | Glu140Lys |  | P | P | 55.15 | T |
| NL\_000527.4(LDLR):c.419A>G (p.Glu140Gly) | Glu140Gly |  | P | P | 74.40 | T |
| NL\_000527.4(LDLR):c.420G>T (p.Glu140Asp) | Glu140Asp |  | P | P | 68.29 | V |
| NL\_000527.4(LDLR):c.427T>C (p.Cys143Arg) | Cys143Arg |  | P | P | 80.93 | T |
| NL\_000527.4(LDLR):c.427T>G (p.Cys143Gly) | Cys143Gly |  | P | P | 74.69 | V |
| NL\_000527.4(LDLR):c.428G>A (p.Cys143Tyr) | Cys143Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.428G>C (p.Cys143Ser) | Cys143Ser |  | P | P | 63.45 | T |
| NL\_000527.4(LDLR):c.428G>T (p.Cys143Phe) | Cys143Phe |  | P | P | 71.00 | T |
| NL\_000527.4(LDLR):c.431C>T (p.Pro144Leu) | Pro144Leu |  | P | P | 59.81 | T |
| NL\_000527.4(LDLR):c.442T>C (p.Cys148Arg) | Cys148Arg |  | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.443G>A (p.Cys148Tyr) | Cys148Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.443G>C (p.Cys148Ser) | Cys148Ser |  | P | P | 63.45 | T |
| NL\_000527.4(LDLR):c.445G>C (p.Gly149Arg) | Gly149Arg |  | P | P | 53.56 | T |
| NL\_000527.4(LDLR):c.44T>A (p.Leu15His) | Leu15His |  | P | B | 49.53 | V |
| NL\_000527.4(LDLR):c.44T>C (p.Leu15Pro) | Leu15Pro | (25) | P | P | 61.95 | T |
| NL\_000527.4(LDLR):c.457T>G (p.Phe153Val) | Phe153Val |  | P | P | 64.90 | T |
| NL\_000527.4(LDLR):c.458T>G (p.Phe153Cys) | Phe153Cys |  | P | P | 67.88 | T |
| NL\_000527.4(LDLR):c.463T>A (p.Cys155Ser) | Cys155Ser |  | P | P | 63.45 | T |
| NL\_000527.4(LDLR):c.463T>C (p.Cys155Arg) | Cys155Arg |  | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.463T>G (p.Cys155Gly) | Cys155Gly |  | P | P | 74.69 | T |
| NL\_000527.4(LDLR):c.464G>A (p.Cys155Tyr) | Cys155Tyr |  | P | P | 76.12 | V |
| NL\_000527.4(LDLR):c.464G>T (p.Cys155Phe) | Cys155Phe |  | P | P | 71.00 | T |
| NL\_000527.4(LDLR):c.478T>C (p.Cys160Arg) | Cys160Arg |  | P | P | 80.93 | T |
| NL\_000527.4(LDLR):c.482T>C (p.Ile161Thr) | Ile161Thr |  | P | P | 61.58 | T |
| NL\_000527.4(LDLR):c.485C>T (p.Pro162Leu) | Pro162Leu |  | P | P | 72.75 | V |
| NL\_000527.4(LDLR):c.499T>C (p.Cys167Arg) | Cys167Arg |  | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.500G>A (p.Cys167Tyr) | Cys167Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.501C>G (p.Cys167Trp) | Cys167Trp |  | P | P | 72.43 | T |
| NL\_000527.4(LDLR):c.502G>A (p.Asp168Asn) | Asp168Asn |  | P | P | 56.88 | V |
| NL\_000527.4(LDLR):c.502G>C (p.Asp168His) | Asp168His |  | P | P | 65.09 | T |
| NL\_000527.4(LDLR):c.503A>C (p.Asp168Ala) | Asp168Ala |  | P | P | 79.67 | T |
| NL\_000527.4(LDLR):c.504C>A (p.Asp168Glu) | Asp168Glu |  | P | P | 69.10 | T |
| NL\_000527.4(LDLR):c.510C>A (p.Asp170Glu) | Asp170Glu |  | P | P | 69.10 | T |
| NL\_000527.4(LDLR):c.514G>A (p.Asp172Asn) | Asp172Asn |  | P | P | 56.88 | T |
| NL\_000527.4(LDLR):c.515A>G (p.Asp172Gly) | Asp172Gly |  | P | P | 76.32 | V |
| NL\_000527.4(LDLR):c.517T>C (p.Cys173Arg) | Cys173Arg |  | P | P | 80.93 | T |
| NL\_000527.4(LDLR):c.518G>A (p.Cys173Tyr) | Cys173Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.519C>G (p.Cys173Trp) | Cys173Trp |  | P | P | 72.43 | T |
| NL\_000527.4(LDLR):c.523G>A (p.Asp175Asn) | Asp175Asn |  | P | P | 56.88 | T |
| NL\_000527.4(LDLR):c.527G>T (p.Gly176Val) | Gly176Val |  | P | P | 65.96 | T |
| NL\_000527.4(LDLR):c.529T>C (p.Ser177Pro) | Ser177Pro |  | P | P | 55.19 | T |
| NL\_000527.4(LDLR):c.530C>T (p.Ser177Leu) | Ser177Leu |  | P | P | 54.56 | V |
| NL\_000527.4(LDLR):c.532G>C (p.Asp178His) | Asp178His |  | P | P | 65.09 | V |
| NL\_000527.4(LDLR):c.533A>G (p.Asp178Gly) | Asp178Gly |  | P | P | 76.32 | T |
| NL\_000527.4(LDLR):c.533A>T (p.Asp178Val) | Asp178Val |  | P | P | 76.70 | T |
| NL\_000527.4(LDLR):c.534T>G (p.Asp178Glu) | Asp178Glu |  | P | P | 69.10 | T |
| NL\_000527.4(LDLR):c.542C>T (p.Pro181Leu) | Pro181Leu |  | P | P | 72.75 | T |
| NL\_000527.4(LDLR):c.550T>C (p.Cys184Arg) | Cys184Arg |  | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.551G>A (p.Cys184Tyr) | Cys184Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.551G>C (p.Cys184Ser) | Cys184Ser |  | P | P | 63.45 | T |
| NL\_000527.4(LDLR):c.586C>A (p.Pro196Thr) | Pro196Thr |  | P | P | 54.20 | T |
| NL\_000527.4(LDLR):c.589T>C (p.Cys197Arg) | Cys197Arg |  | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.589T>G (p.Cys197Gly) | Cys197Gly |  | P | P | 74.69 | T |
| NL\_000527.4(LDLR):c.590G>A (p.Cys197Tyr) | Cys197Tyr |  | P | P | 76.12 | V |
| NL\_000527.4(LDLR):c.590G>T (p.Cys197Phe) | Cys197Phe |  | P | P | 71.00 | T |
| NL\_000527.4(LDLR):c.591C>G (p.Cys197Trp) | Cys197Trp |  | P | P | 72.43 | T |
| NL\_000527.4(LDLR):c.610T>G (p.Cys204Gly) | Cys204Gly |  | P | P | 74.69 | T |
| NL\_000527.4(LDLR):c.611G>A (p.Cys204Tyr) | Cys204Tyr |  | P | P | 76.12 | V |
| NL\_000527.4(LDLR):c.611G>C (p.Cys204Ser) | Cys204Ser |  | P | P | 63.45 | T |
| NL\_000527.4(LDLR):c.611G>T (p.Cys204Phe) | Cys204Phe |  | P | P | 71.00 | T |
| NL\_000527.4(LDLR):c.613C>G (p.Leu205Val) | Leu205Val |  | P | P | 51.22 | T |
| NL\_000527.4(LDLR):c.622G>A (p.Glu208Lys) | Glu208Lys |  | P | P | 55.15 | T |
| NL\_000527.4(LDLR):c.626G>A (p.Cys209Tyr) | Cys209Tyr |  | P | P | 77.97 | T |
| NL\_000527.4(LDLR):c.628A>C (p.Ile210Leu) | Ile210Leu |  | P | B | 45.25 | T |
| NL\_000527.4(LDLR):c.629T>C (p.Ile210Thr) | Ile210Thr |  | P | P | 74.53 | T |
| NL\_000527.4(LDLR):c.631C>T (p.His211Tyr) | His211Tyr | (10) | P | P | 58.35 | T |
| NL\_000527.4(LDLR):c.632A>T (p.His211Leu) | His211Leu | (26) | P | P | 50.36 | V |
| NL\_000527.4(LDLR):c.641G>C (p.Trp214Ser) | Trp214Ser |  | P | P | 71.40 | V |
| NL\_000527.4(LDLR):c.643C>T (p.Arg215Cys) | Arg215Cys |  | P | P | 62.72 | T |
| NL\_000527.4(LDLR):c.644G>A (p.Arg215His) | Arg215His |  | P | P | 54.21 | V |
| NL\_000527.4(LDLR):c.646T>C (p.Cys216Arg) | Cys216Arg |  | P | P | 82.78 | T |
| NL\_000527.4(LDLR):c.647G>A (p.Cys216Tyr) | Cys216Tyr |  | P | P | 77.97 | T |
| NL\_000527.4(LDLR):c.661G>A (p.Asp221Asn) | Asp221Asn |  | P | P | 56.88 | T |
| NL\_000527.4(LDLR):c.662A>G (p.Asp221Gly) | Asp221Gly |  | P | P | 76.32 | V |
| NL\_000527.4(LDLR):c.664T>C (p.Cys222Arg) | Cys222Arg | (8) | P | P | 80.93 | T |
| NL\_000527.4(LDLR):c.665G>T (p.Cys222Phe) | Cys222Phe |  | P | P | 71.00 | V |
| NL\_000527.4(LDLR):c.669G>C (p.Lys223Asn) | Lys223Asn |  | P | B | 34.51 | T |
| NL\_000527.4(LDLR):c.670G>A (p.Asp224Asn) | Asp224Asn |  | P | P | 58.73 | V |
| NL\_000527.4(LDLR):c.671A>T (p.Asp224Val) | Asp224Val |  | P | P | 78.55 | T |
| NL\_000527.4(LDLR):c.676T>C (p.Ser226Pro) | Ser226Pro |  | P | P | 55.19 | V |
| NL\_000527.4(LDLR):c.681C>A (p.Asp227Glu) | Asp227Glu |  | P | P | 69.10 | V |
| NL\_000527.4(LDLR):c.682G>A (p.Glu228Lys) | Glu228Lys |  | P | P | 55.15 | T |
| NL\_000527.4(LDLR):c.682G>C (p.Glu228Gln) | Glu228Gln |  | P | P | 67.69 | T |
| NL\_000527.4(LDLR):c.683A>C (p.Glu228Ala) | Glu228Ala |  | P | P | 85.40 | T |
| NL\_000527.4(LDLR):c.683A>G (p.Glu228Gly) | Glu228Gly |  | P | P | 74.40 | T |
| NL\_000527.4(LDLR):c.684G>C (p.Glu228Asp) | Glu228Asp |  | P | P | 68.29 | V |
| NL\_000527.4(LDLR):c.691T>G (p.Cys231Gly) | Cys231Gly |  | P | P | 74.69 | T |
| NL\_000527.4(LDLR):c.692G>A (p.Cys231Tyr) | Cys231Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.693C>G (p.Cys231Trp) | Cys231Trp |  | P | P | 72.43 | V |
| NL\_000527.4(LDLR):c.706T>C (p.Cys236Arg) | Cys236Arg |  | P | P | 80.93 | T |
| NL\_000527.4(LDLR):c.706T>G (p.Cys236Gly) | Cys236Gly |  | P | P | 74.69 | T |
| NL\_000527.4(LDLR):c.718G>A (p.Glu240Lys) | Glu240Lys | (13) | P | P | 57.00 | V |
| NL\_000527.4(LDLR):c.722T>C (p.Phe241Ser) | Phe241Ser |  | P | P | 66.04 | T |
| NL\_000527.4(LDLR):c.722T>G (p.Phe241Cys) | Phe241Cys |  | P | P | 69.73 | T |
| NL\_000527.4(LDLR):c.731C>G (p.Ser244Cys) | Ser244Cys |  | P | B | 46.06 | T |
| NL\_000527.4(LDLR):c.737G>T (p.Gly246Val) | Gly246Val |  | P | P | 65.96 | T |
| NL\_000527.4(LDLR):c.742T>G (p.Cys248Gly) | Cys248Gly |  | P | P | 76.54 | V |
| NL\_000527.4(LDLR):c.743G>C (p.Cys248Ser) | Cys248Ser |  | P | P | 65.30 | T |
| NL\_000527.4(LDLR):c.743G>T (p.Cys248Phe) | Cys248Phe |  | P | P | 72.85 | T |
| NL\_000527.4(LDLR):c.761A>C (p.Gln254Pro) | Gln254Pro |  | P | P | 63.96 | T |
| NL\_000527.4(LDLR):c.762G>T (p.Gln254His) | Gln254His |  | P | P | 55.39 | T |
| NL\_000527.4(LDLR):c.763T>A (p.Cys255Ser) | Cys255Ser |  | P | P | 65.30 | T |
| NL\_000527.4(LDLR):c.767A>G (p.Asp256Gly) | Asp256Gly |  | P | P | 76.32 | T |
| NL\_000527.4(LDLR):c.770G>C (p.Arg257Pro) | Arg257Pro |  | P | B | 43.53 | T |
| NL\_000527.4(LDLR):c.782G>A (p.Cys261Tyr) | Cys261Tyr |  | P | P | 77.97 | V |
| NL\_000527.4(LDLR):c.782G>T (p.Cys261Phe) | Cys261Phe |  | P | P | 72.85 | T |
| NL\_000527.4(LDLR):c.796G>A (p.Asp266Asn) | Asp266Asn |  | P | P | 56.88 | V |
| NL\_000527.4(LDLR):c.796G>T (p.Asp266Tyr) | Asp266Tyr |  | P | P | 77.75 | T |
| NL\_000527.4(LDLR):c.79T>C (p.Cys27Arg) | Cys27Arg |  | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.801A>T (p.Glu267Asp) | Glu267Asp |  | P | P | 68.29 | T |
| NL\_000527.4(LDLR):c.805G>A (p.Gly269Ser) | Gly269Ser |  | P | P | 51.31 | V |
| NL\_000527.4(LDLR):c.808T>A (p.Cys270Ser) | Cys270Ser |  | P | P | 63.45 | T |
| NL\_000527.4(LDLR):c.808T>C (p.Cys270Arg) | Cys270Arg |  | P | P | 80.93 | T |
| NL\_000527.4(LDLR):c.809G>A (p.Cys270Tyr) | Cys270Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.81C>G (p.Cys27Trp) | Cys27Trp | (13) | P | P | 72.43 | T |
| NL\_000527.4(LDLR):c.826T>C (p.Cys276Arg) | Cys276Arg | (13) | P | P | 80.93 | V |
| NL\_000527.4(LDLR):c.826T>G (p.Cys276Gly) | Cys276Gly |  | P | P | 74.69 | T |
| NL\_000527.4(LDLR):c.827G>A (p.Cys276Tyr) | Cys276Tyr |  | P | P | 76.12 | T |
| NL\_000527.4(LDLR):c.828C>G (p.Cys276Trp) | Cys276Trp |  | P | P | 72.43 | T |
| NL\_000527.4(LDLR):c.846C>A (p.Phe282Leu) | Phe282Leu | (8) | P | P | 52.16 | T |
| NL\_000527.4(LDLR):c.850T>C (p.Cys284Arg) | Cys284Arg |  | P | P | 82.78 | T |
| NL\_000527.4(LDLR):c.850T>G (p.Cys284Gly) | Cys284Gly |  | P | P | 76.54 | T |
| NL\_000527.4(LDLR):c.858C>A (p.Ser286Arg) | Ser286Arg |  | P | P | 63.77 | T |
| NL\_000527.4(LDLR):c.859G>A (p.Gly287Ser) | Gly287Ser |  | P | P | 53.16 | T |
| NL\_000527.4(LDLR):c.859G>T (p.Gly287Cys) | Gly287Cys |  | P | P | 70.78 | T |
| NL\_000527.4(LDLR):c.862G>A (p.Glu288Lys) | Glu288Lys | (27) | P | P | 55.15 | T |
| NL\_000527.4(LDLR):c.865T>G (p.Cys289Gly) | Cys289Gly |  | P | P | 76.54 | V |
| NL\_000527.4(LDLR):c.869T>G (p.Ile290Ser) | Ile290Ser |  | P | P | 66.18 | V |
| NL\_000527.4(LDLR):c.880A>G (p.Lys294Glu) | Lys294Glu |  | P | P | 66.02 | V |
| NL\_000527.4(LDLR):c.886T>C (p.Cys296Arg) | Cys296Arg |  | P | P | 81.72 | T |
| NL\_000527.4(LDLR):c.887G>A (p.Cys296Tyr) | Cys296Tyr |  | P | P | 76.92 | T |
| NL\_000527.4(LDLR):c.887G>C (p.Cys296Ser) | Cys296Ser |  | P | P | 64.25 | T |
| NL\_000527.4(LDLR):c.895G>A (p.Ala299Thr) | Ala299Thr |  | P | B | 47.07 | T |
| NL\_000527.4(LDLR):c.898A>G (p.Arg300Gly) | Arg300Gly | (28) | P | P | 55.62 | V |
| NL\_000527.4(LDLR):c.901G>T (p.Asp301Tyr) | Asp301Tyr |  | P | P | 78.55 | T |
| NL\_000527.4(LDLR):c.902A>C (p.Asp301Ala) | Asp301Ala |  | P | P | 80.47 | V |
| NL\_000527.4(LDLR):c.902A>G (p.Asp301Gly) | Asp301Gly |  | P | P | 77.12 | T |
| NL\_000527.4(LDLR):c.904T>C (p.Cys302Arg) | Cys302Arg |  | P | P | 83.57 | V |
| NL\_000527.4(LDLR):c.905G>T (p.Cys302Phe) | Cys302Phe |  | P | P | 73.65 | T |
| NL\_000527.4(LDLR):c.906C>G (p.Cys302Trp) | Cys302Trp |  | P | P | 75.08 | T |
| NL\_000527.4(LDLR):c.910G>A (p.Asp304Asn) | Asp304Asn |  | P | P | 59.53 | T |
| NL\_000527.4(LDLR):c.910G>C (p.Asp304His) | Asp304His |  | P | P | 67.74 | T |
| NL\_000527.4(LDLR):c.910G>T (p.Asp304Tyr) | Asp304Tyr |  | P | P | 80.40 | T |
| NL\_000527.4(LDLR):c.911A>T (p.Asp304Val) | Asp304Val |  | P | P | 79.34 | T |
| NL\_000527.4(LDLR):c.912C>G (p.Asp304Glu) | Asp304Glu |  | P | P | 71.75 | V |
| NL\_000527.4(LDLR):c.915G>C (p.Trp305Cys) | Trp305Cys |  | P | P | 84.35 | T |
| NL\_000527.4(LDLR):c.917C>T (p.Ser306Leu) | Ser306Leu |  | P | P | 57.21 | V |
| NL\_000527.4(LDLR):c.919G>C (p.Asp307His) | Asp307His |  | P | P | 67.74 | T |
| NL\_000527.4(LDLR):c.920A>G (p.Asp307Gly) | Asp307Gly |  | P | P | 78.97 | T |
| NL\_000527.4(LDLR):c.921T>G (p.Asp307Glu) | Asp307Glu |  | P | P | 71.75 | V |
| NL\_000527.4(LDLR):c.922G>A (p.Glu308Lys) | Glu308Lys |  | P | P | 57.80 | V |
| NL\_000527.4(LDLR):c.924A>T (p.Glu308Asp) | Glu308Asp |  | P | P | 70.94 | T |
| NL\_000527.4(LDLR):c.932A>C (p.Lys311Thr) | Lys311Thr |  | P | P | 64.80 | T |
| NL\_000527.4(LDLR):c.937T>G (p.Cys313Gly) | Cys313Gly |  | P | P | 75.49 | T |
| NL\_000527.4(LDLR):c.938G>A (p.Cys313Tyr) | Cys313Tyr |  | P | P | 76.92 | V |
| NL\_000527.4(LDLR):c.947A>C (p.Asn316Thr) | Asn316Thr |  | P | P | 53.96 | T |
| NL\_000527.4(LDLR):c.947A>G (p.Asn316Ser) | Asn316Ser |  | P | B | 45.62 | T |
| NL\_000527.4(LDLR):c.949G>A (p.Glu317Lys) | Glu317Lys |  | P | B | 43.00 | T |
| NL\_000527.4(LDLR):c.952T>C (p.Cys318Arg) | Cys318Arg |  | P | P | 81.72 | T |
| NL\_000527.4(LDLR):c.953G>A (p.Cys318Tyr) | Cys318Tyr |  | P | P | 76.92 | T |
| NL\_000527.4(LDLR):c.953G>T (p.Cys318Phe) | Cys318Phe |  | P | P | 71.80 | T |
| NL\_000527.4(LDLR):c.95T>G (p.Phe32Cys) | Phe32Cys |  | P | P | 69.73 | V |
| NL\_000527.4(LDLR):c.965A>T (p.Asn322Ile) | Asn322Ile |  | P | P | 64.94 | V |
| NL\_000527.4(LDLR):c.967G>A (p.Gly323Ser) | Gly323Ser |  | P | P | 52.11 | V |
| NL\_000527.4(LDLR):c.967G>T (p.Gly323Cys) | Gly323Cys |  | P | P | 69.73 | T |
| NL\_000527.4(LDLR):c.973T>C (p.Cys325Arg) | Cys325Arg |  | P | P | 81.72 | V |
| NL\_000527.4(LDLR):c.974G>A (p.Cys325Tyr) | Cys325Tyr |  | P | P | 76.92 | T |
| NL\_000527.4(LDLR):c.974G>T (p.Cys325Phe) | Cys325Phe |  | P | P | 71.80 | T |
| NL\_000527.4(LDLR):c.977C>G (p.Ser326Cys) | Ser326Cys |  | P | P | 59.79 | T |
| NL\_000527.4(LDLR):c.977C>T (p.Ser326Phe) | Ser326Phe |  | P | P | 63.78 | T |
| NL\_000527.4(LDLR):c.981C>A (p.His327Gln) | His327Gln |  | P | P | 52.87 | T |
| NL\_000527.4(LDLR):c.985T>C (p.Cys329Arg) | Cys329Arg |  | P | P | 83.57 | T |
| NL\_000527.4(LDLR):c.985T>G (p.Cys329Gly) | Cys329Gly |  | P | P | 77.34 | V |
| NL\_000527.4(LDLR):c.986G>T (p.Cys329Phe) | Cys329Phe |  | P | P | 73.65 | T |
| NL\_000527.4(LDLR):c.987C>G (p.Cys329Trp) | Cys329Trp |  | P | P | 75.08 | T |
| NL\_000527.5(LDLR):c.1228A>G (p.Arg410Gly) | Arg410Gly |  | P | P | 54.19 | V |
| NL\_000527.5(LDLR):c.1432G>A (p.Gly478Arg) | Gly478Arg |  | P | P | 65.87 | V |
| NL\_000527.5(LDLR):c.1736A>T (p.Asp579Val) | Asp579Val |  | P | P | 77.91 | T |
| NL\_000527.5(LDLR):c.1981C>G (p.Pro661Ala) | Pro661Ala |  | P | P | 71.48 | T |
| NL\_000527.5(LDLR):c.2043C>G (p.Cys681Trp) | Cys681Trp |  | P | P | 72.96 | T |
| NL\_000527.5(LDLR):c.2100C>G (p.Asp700Glu) | Asp700Glu |  | P | P | 72.81 | T |
| NL\_000527.5(LDLR):c.2119G>A (p.Asp707Asn) | Asp707Asn |  | P | B | 47.64 | V |
| NL\_000527.5(LDLR):c.310T>G (p.Cys104Gly) | Cys104Gly |  | P | P | 74.69 | T |
| NL\_000527.5(LDLR):c.325T>G (p.Cys109Gly) | Cys109Gly |  | P | P | 74.69 | T |
| NL\_000527.5(LDLR):c.376T>C (p.Phe126Leu) | Phe126Leu |  | P | P | 50.31 | V |
| NL\_000527.5(LDLR):c.401G>C (p.Cys134Ser) | Cys134Ser |  | P | P | 63.45 | T |
| NL\_000527.5(LDLR):c.625T>G (p.Cys209Gly) | Cys209Gly |  | P | P | 76.54 | T |
| NL\_000527.5(LDLR):c.665G>A (p.Cys222Tyr) | Cys222Tyr |  | P | P | 76.12 | T |
| NL\_000527.5(LDLR):c.764G>A (p.Cys255Tyr) | Cys255Tyr |  | P | P | 77.97 | V |
| NL\_001195798.2(LDLR):c.1019\_1020delinsTG (p.Cys340Leu) | Cys340Leu |  | P | P | 58.55 | V |
| NL\_001195798.2(LDLR):c.1049G>A (p.Arg350Gln) | Arg350Gln |  | P | B | 27.93 | T |
| NL\_001195798.2(LDLR):c.1594T>A (p.Tyr532Asn) | Tyr532Asn |  | P | P | 67.93 | T |
| NL\_001195798.2(LDLR):c.926C>A (p.Pro309His) | Pro309His |  | P | P | 70.49 | T |
| NL\_001195799.2(LDLR):c.190+2353T>G | Cys75Trp |  | P | P | 74.28 | T |
| NL\_001195799.2(LDLR):c.190+2369C>A | Arg81Ser |  | P | B | 35.19 | T |
| NL\_001195799.2(LDLR):c.190+2379C>G | Pro84Arg |  | P | P | 73.87 | V |
| NL\_001195799.2(LDLR):c.190+2395C>G | Cys89Trp |  | P | P | 74.28 | T |
| NL\_001195799.2(LDLR):c.190+2408G>T | Asp94Tyr |  | P | P | 77.75 | V |
| NL\_001195799.2(LDLR):c.190+2411T>A | Cys95Ser |  | P | P | 63.45 | T |
| NL\_001195799.2(LDLR):c.191-2435T>G | Cys104Trp |  | P | P | 72.43 | V |
| NL\_001195799.2(LDLR):c.191-2437T>C | Cys104Arg |  | P | P | 80.93 | T |
| NL\_001195800.2(LDLR):c.314-1795T>C | Asp227Val |  | P | P | 76.70 | T |
| NL\_001195800.2(LDLR):c.314-1802G>T | Ser226Cys |  | P | P | 59.00 | T |
| NL\_001195800.2(LDLR):c.314-1809C>G | Asp224Gly |  | P | P | 78.17 | T |
| NL\_001195800.2(LDLR):c.314-1815A>C | Cys222Trp |  | P | P | 72.43 | T |
| NL\_001195800.2(LDLR):c.314-1820C>G | Asp221Val |  | P | P | 76.70 | T |
| NL\_001195800.2(LDLR):c.314-1821G>A | Asp221Tyr |  | P | P | 77.75 | T |
| NL\_001195800.2(LDLR):c.314-1822T>G | Cys222Gly |  | P | P | 74.69 | T |
| NL\_001195800.2(LDLR):c.314-1824A>T | Cys216Phe |  | P | P | 72.85 | V |
| NL\_001195800.2(LDLR):c.314-1839G>T | Arg215Ser |  | P | B | 48.13 | T |
| NL\_001195800.2(LDLR):c.314-1843C>A | Ile210Asn |  | P | P | 61.79 | V |
| NL\_001195800.2(LDLR):c.314-1855C>G | His211Asp | (29) | P | P | 71.67 | T |
| NL\_001195800.2(LDLR):c.314-1857T>A | Ser206Arg |  | P | P | 61.92 | T |
| NL\_001195800.2(LDLR):c.314-1868T>G | Phe202Ser |  | P | P | 64.19 | V |
| NL\_001195800.2(LDLR):c.314-1881T>C | Glu201Ser |  | P | P | 70.81 | T |
| NL\_001195800.2(LDLR):c.314-1934T>G | Cys184Trp |  | P | P | 72.43 | T |
| NL\_001195800.2(LDLR):c.314-1950A>G | Glu179Gly |  | P | P | 74.40 | T |
| NL\_001195800.2(LDLR):c.314-1951G>A | Glu179Lys |  | P | P | 55.15 | V |
| NL\_001195800.2(LDLR):c.314-1954G>A | Asp178Asn |  | P | P | 56.88 | T |
| NL\_001195800.2(LDLR):c.314-1954G>T | Asp178Tyr |  | P | P | 77.75 | T |
| NL\_001195800.2(LDLR):c.314-1963G>T | Asp175Tyr |  | P | P | 77.75 | V |
| NL\_001195800.2(LDLR):c.314-1968G>C | Cys173Ser |  | P | P | 63.45 | T |
| NL\_001195800.2(LDLR):c.314-1969T>G | Cys173Gly |  | P | P | 74.69 | V |
| NL\_001195800.2(LDLR):c.314-1970C>G | Asp172Glu |  | P | P | 69.10 | T |
| NL\_001195800.2(LDLR):c.314-1972G>C | Asp172His |  | P | P | 65.09 | T |
| NL\_001195800.2(LDLR):c.314-1972G>T | Asp172Tyr |  | P | P | 77.75 | T |
| NL\_001195800.2(LDLR):c.314-1980A>T | Asn169Ile |  | P | P | 51.21 | T |
| NL\_001195800.2(LDLR):c.314-1983A>G | Asp168Gly |  | P | P | 76.32 | T |
| NL\_001195800.2(LDLR):c.314-1984G>T | Asp168Tyr |  | P | P | 77.75 | V |
| NL\_001195800.2(LDLR):c.314-1993T>G | Trp165Gly |  | P | P | 73.14 | T |
| NL\_001195800.2(LDLR):c.314-1995T>C | Leu164Pro |  | P | P | 73.56 | T |
| NL\_001195800.2(LDLR):c.314-2007\_314-2006delinsTT | Cys160Phe |  | P | P | 71.00 | T |
| NL\_001195800.2(LDLR):c.314-2008T>G | Cys160GLy |  | P | P | 74.69 | T |
| NL\_001195800.2(LDLR):c.314-2013C>G | Ser158Cys |  | P | B | 46.06 | T |
| NL\_001195800.2(LDLR):c.314-2016G>A | Ser157Asn |  | P | B | 47.11 | T |
| NL\_001195800.2(LDLR):c.314-2042T>G | Cys148Trp |  | P | P | 72.43 | T |
| NL\_001195800.2(LDLR):c.314-2046C>T | Thr147Ile |  | P | P | 62.70 | T |
| NL\_001195800.2(LDLR):c.314-2071G>C | Asp139His |  | P | P | 65.09 | T |
| NL\_001195800.2(LDLR):c.314-2084C>G | Cys134Trp |  | P | P | 72.43 | T |
| NL\_001195800.2(LDLR):c.314-2085G>A | Cys134Tyr |  | P | P | 76.12 | T |
| NL\_001195800.2(LDLR):c.314-2089G>A | Asp133Asn |  | P | P | 56.88 | V |
| NL\_001195800.2(LDLR):c.314-2100A>G | Asp129Gly |  | P | P | 76.32 | T |
| NL\_001195800.2(LDLR):c.314-2103G>T | Cys128Phe |  | P | P | 71.00 | T |
| NL\_001195800.2(LDLR):c.314-2106T>A | Val127Asp |  | P | P | 51.97 | T |
| NL\_001195800.2(LDLR):c.314-2109T>A | Phe126Tyr |  | P | P | 63.73 | T |
| NL\_001195800.2(LDLR):c.314-2110T>C | Gln125Leu |  | P | B | 32.04 | T |
| NL\_001195800.2(LDLR):c.314-2122A>T | Ile122Phe |  | P | B | 45.27 | T |
| NL\_001195800.2(LDLR):c.314-2124G>T | Cys121Phe |  | P | P | 71.00 | T |
| NL\_001195800.2(LDLR):c.314-2125T>A | Cys121Ser |  | P | P | 63.45 | T |
| NL\_001195800.2(LDLR):c.314-2125T>G | Cys121Gly |  | P | P | 74.69 | T |
| NL\_001195800.2(LDLR):c.314-2139G>T | Cys116Phe |  | P | P | 71.00 | T |
| NL\_001195800.2(LDLR):c.314-2160G>C | Cys109Ser |  | P | P | 63.45 | V |
| NL\_001195800.2(LDLR):c.314-2162\_314-2161delinsTC | Cys109Arg |  | P | P | 80.93 | T |
| NL\_001195800.2(LDLR):c.314-711G>A | Asp266Gly |  | P | P | 76.32 | T |
| NL\_001195800.2(LDLR):c.314-725A>G | Asp225Gly |  | P | P | 67.98 | V |
| NL\_001195800.2(LDLR):c.314-725A>T | Ser265Cys |  | P | P | 59.00 | T |
| NL\_001195800.2(LDLR):c.314-729A>T | Asp256Glu |  | P | P | 69.10 | T |
| NL\_001195800.2(LDLR):c.314-754C>A | Arg253Pro |  | P | P | 56.48 | T |
| NL\_001195800.2(LDLR):c.314-754C>G | Cys255Gly |  | P | P | 76.54 | T |
| NL\_001195800.2(LDLR):c.314-758G>A | Asp224Ala |  | P | P | 81.52 | T |
| NL\_001195800.2(LDLR):c.314-759T>G | Ile249Thr |  | P | P | 74.53 | T |
| NL\_001195800.2(LDLR):c.314-760\_314-759inv | Cys255Arg |  | P | P | 82.78 | V |
| NL\_001195800.2(LDLR):c.314-776T>C | Cys231Arg |  | P | P | 80.93 | T |
| NL\_001195800.2(LDLR):c.314-779G>A | Cys248Tyr |  | P | P | 77.97 | T |
| NL\_001195803.2(LDLR):c.1310A>G (p.Asn437Ser) | Asn437Ser |  | P | P | 71.85 | T |
| NL\_001195803.2(LDLR):c.1606+137G>A | Asp266Val |  | P | P | 76.70 | T |
| NL\_001195803.2(LDLR):c.1606+148T>A | Val271Ile |  | P | B | 5.09 | T |
| NL\_001195803.2(LDLR):c.1606+149G>T | Gly663Glu |  | P | P | 62.44 | T |
| NL\_001195803.2(LDLR):c.1606+179G>A | Cys667Ser |  | P | P | 51.04 | T |
| NL\_001195803.2(LDLR):c.1606+191G>C | Cys667Phe |  | P | P | 58.59 | V |
| NL\_001195803.2(LDLR):c.1606+192C>G | Cys677Tyr |  | P | P | 76.65 | T |
| NL\_001195803.2(LDLR):c.1606+194T>C | Leu682Pro |  | P | P | 87.04 | V |
| NL\_001195803.2(LDLR):c.1606+202C>T | Pro685Ser |  | P | P | 59.33 | V |
| NL\_001195803.2(LDLR):c.1606+203C>A | Pro685Gln |  | P | P | 72.33 | T |
| NL\_001195803.2(LDLR):c.1606+229T>G | Phe694Val |  | P | P | 65.44 | T |
| NL\_001195803.2(LDLR):c.1606+249C>G | Cys696Trp |  | P | P | 74.81 | T |
| NL\_001195803.2(LDLR):c.1606+268G>A | Ala697Pro |  | P | P | 59.75 | V |
| NL\_001195803.2(LDLR):c.1606+281G>C | Cys711Ser |  | P | P | 67.15 | T |
| NL\_001195803.2(LDLR):c.1606+289G>A | Glu715Lys |  | P | B | 38.28 | T |

f(Pi)obs=Clinical significance based on ClinVar f(Pi)pred=Pathogenicity predicted by MLb-LDLr p(Pi=1)pred= Probability of being pathogenic (%) based on MLb-LDLr P=Pathogenic B=Benign T=Training V=Validation

Table S10: Prediction of MLb-LDLr, PolyPhen-2, SIFT, SFIP-MutID, CADD and Mutation Taster about ClinVar database.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ClinVar code | Variant | CS | MLb | PolyPhen-2 | SIFT | SFIP-MutID | CADD | Mutation Taster |
| NM\_000527.4(LDLR):c.451G>A (p.Ala151Thr) | Ala151Thr | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1171G>A (p.Ala391Thr) | Ala391Thr | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1376C>G (p.Ala459Gly) | Ala459Gly | B | B | B | B | P | B | P |
| NM\_000527.4(LDLR):c.1834G>T (p.Ala612Ser) | Ala612Ser | B | B | P | B | P | P | P |
| NM\_000527.4(LDLR):c.2113G>T (p.Ala705Ser) | Ala705Ser | B | B | B | B | B | P | P |
| NM\_000527.4(LDLR):c.548G>A (p.Arg183His) | Arg183His | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.757C>T (p.Arg253Trp) | Arg253Trp | B | B | P | B | P | B | P |
| NM\_000527.4(LDLR):c.769C>T (p.Arg257Trp) | Arg257Trp | B | B | P | B | B | B | B |
| NM\_000527.4(LDLR):c.1411A>G (p.Arg471Gly) | Arg471Gly | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.2209A>G (p.Arg737Gly) | Arg737Gly | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.2364G>T (p.Arg788Ser) | Arg788Ser | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.1024G>A (p.Asp342Asn) | Asp342Asn | B | B | B | B | B | B | B |
| NM\_000527.4(LDLR):c.1078G>C (p.Asp360His) | Asp360His | B | B | B | B | P | P | B |
| NM\_000527.4(LDLR):c.1802A>G (p.Asp601Gly) | Asp601Gly | B | P | P | B | P | P | B |
| NM\_000527.4(LDLR):c.373C>A (p.Gln125Lys) | Gln125Lys | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.829G>A (p.Glu277Lys) | Glu277Lys | B | B | B | B | P | B | P |
| NM\_000527.4(LDLR):c.2289G>T (p.Glu763Asp) | Glu763Asp | B | B | P | B | - | B | B |
| NM\_000527.4(LDLR):c.59G>A (p.Gly20Glu) | Gly20Glu | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.4G>A (p.Gly2Arg) | Gly2Arg | B | B | B | P | - | B | B |
| NM\_000527.4(LDLR):c.1120\_1121delinsTC (p.Gly374Ser) | Gly374Ser | B | B | B | B | P | P | B |
| NM\_000527.4(LDLR):c.1186G>A (p.Gly396Ser) | Gly396Ser | B | B | P | B | P | B | P |
| NM\_000527.4(LDLR):c.2260G>A (p.Gly754Arg) | Gly754Arg | B | B | B | B | - | B | B |
| NM\_001195800.2(LDLR):c.314-2137C>T | His117Tyr | B | B | B | B | B | B | B |
| NM\_000527.4(LDLR):c.929T>C (p.Ile310Thr) | Ile310Thr | B | P | B | B | B | B | P |
| NM\_000527.4(LDLR):c.1063A>G (p.Ile355Val) | Ile355Val | B | B | B | B | P | B | P |
| NM\_000527.4(LDLR):c.1792A>C (p.Ile598Leu) | Ile598Leu | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.2291T>C (p.Ile764Thr) | Ile764Thr | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.1809G>C (p.Lys603Asn) | Lys603Asn | B | B | B | B | P | B | B |
| NM\_001195800.2(LDLR):c.314-732A>G | Met264Val | B | B | B | B | B | B | B |
| NM\_000527.4(LDLR):c.1954A>G (p.Met652Val) | Met652Val | B | B | B | P | P | B | B |
| NM\_001195800.2(LDLR):c.314-1886C>A | Phe200Leu | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1022C>G (p.Pro341Arg) | Pro341Arg | B | P | B | B | P | B | P |
| NM\_000527.4(LDLR):c.250C>T (p.Pro84Ser) | Pro84Ser | B | P | B | B | B | B | B |
| NM\_001195800.2(LDLR):c.314-2098T>A | Ser130Thr | B | B | B | B | B | B | B |
| NM\_001195800.2(LDLR):c.314-1902G>A | Ser195Asn | B | B | B | B | P | B | B |
| NM\_001195798.2(LDLR):c.1261A>G (p.Ser421Gly) | Ser421Gly | B | B | B | B | P | P | P |
| NM\_000527.4(LDLR):c.1457G>A (p.Ser486Asn) | Ser486Asn | B | B | B | B | P | B | P |
| NM\_000527.4(LDLR):c.147C>A (p.Ser49Arg) | Ser49Arg | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1715G>A (p.Ser572Asn) | Ser572Asn | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.820A>T (p.Thr274Ser) | Thr274Ser | B | B | B | B | P | B | P |
| NM\_000527.4(LDLR):c.1088C>A (p.Thr363Asn) | Thr363Asn | B | B | P | B | P | B | P |
| NM\_000527.4(LDLR):c.1612A>T (p.Thr538Ser) | Thr538Ser | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.185C>T (p.Thr62Met) | Thr62Met | B | B | P | B | B | B | P |
| NM\_000527.4(LDLR):c.2171C>T (p.Thr724Ile) | Thr724Ile | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.2177C>T (p.Thr726Ile) | Thr726Ile | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.434T>C (p.Val145Ala) | Val145Ala | B | B | B | B | P | B | B |
| NM\_001195800.2(LDLR):c.314-1921G>A | Val189Met | B | B | P | B | B | B | B |
| NM\_000527.4(LDLR):c.1402G>A (p.Val468Ile) | Val468Ile | B | B | B | B | P | B | P |
| NM\_000527.4(LDLR):c.1492G>T (p.Val498Phe) | Val498Phe | B | B | B | P | P | B | P |
| NM\_000527.4(LDLR):c.2155G>C (p.Val719Leu) | Val719Leu | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.2294T>G (p.Val765Gly) | Val765Gly | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.2479G>A (p.Val827Ile) | Val827Ile | B | B | P | P | - | B | P |
| NM\_000527.4(LDLR):c.990T>A (p.Asn330Lys) | Asn330Lys | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.53C>T (p.Ala18Val) | Ala18Val | B | B | B | B | - | B | B |
| NM\_001195800.2(LDLR):c.314-1792G>T | Ala232Ser | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.148G>T (p.Ala50Ser) | Ala50Ser | B | B | B | P | B | B | B |
| NM\_000527.4(LDLR):c.370C>G (p.Arg124Gly) | Arg124Gly | B | B | B | B | B | B | B |
| NM\_001195800.2(LDLR):c.314-752G>T | Arg257Leu | B | B | B | B | B | B | B |
| NM\_000527.4(LDLR):c.1538G>A (p.Arg513Lys) | Arg513Lys | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1244A>G (p.Asp415Gly) | Asp415Gly | B | P | B | P | P | B | P |
| NM\_001195800.2(LDLR):c.314-750G>A | Glu258Lys | B | B | B | B | P | B | P |
| NM\_000527.4(LDLR):c.58G>A (p.Gly20Arg) | Gly20Arg | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.970G>A (p.Gly324Ser) | Gly324Ser | B | P | P | B | P | B | P |
| NM\_000527.4(LDLR):c.211G>A (p.Gly71Arg) | Gly71Arg | B | B | B | B | B | B | B |
| NM\_000527.4(LDLR):c.855C>A (p.His285Gln) | His285Gln | B | B | B | P | B | B | B |
| NM\_000527.4(LDLR):c.1417A>G (p.Ile473Val) | Ile473Val | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1808A>G (p.Lys603Arg) | Lys603Arg | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1236G>A (p.Met412Ile) | Met412Ile | B | B | B | B | P | B | P |
| NM\_000527.4(LDLR):c.1825T>C (p.Phe609Leu) | Phe609Leu | B | B | B | B | P | B | P |
| NM\_001195800.2(LDLR):c.314-2119T>A | Ser123Thr | B | B | B | P | B | B | B |
| NM\_000527.4(LDLR):c.1189T>A (p.Ser397Thr) | Ser397Thr | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1456A>G (p.Ser486Gly) | Ser486Gly | B | B | B | B | P | B | B |
| NM\_001195800.2(LDLR):c.314-2010C>T | Thr159Ile | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1400C>T (p.Thr467Ile) | Thr467Ile | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1976C>A (p.Thr659Asn) | Thr659Asn | B | B | B | B | B | B | B |
| NM\_000527.4(LDLR):c.2224A>G (p.Thr742Ala) | Thr742Ala | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.1384G>A (p.Val462Ile) | Val462Ile | B | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.2417T>A (p.Val806Asp) | Val806Asp | B | B | B | B | - | B | B |
| NM\_001195803.2(LDLR):c.1606+139G>A | Val664Met | B | B | P | B | P | B | B |
| NM\_000527.4(LDLR):c.2398G>A (p.Val800Ile) | Val800Ile | B | B | B | B | - | B | B |
| NM\_000527.4(LDLR):c.895G>A (p.Ala299Thr) | Ala299Thr | P | B | B | B | B | B | B |
| NM\_000527.4(LDLR):c.1196C>A (p.Ala399Asp) | Ala399Asp | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1195G>T (p.Ala399Ser) | Ala399Ser | P | B | B | B | P | P | P |
| NM\_000527.4(LDLR):c.1291G>C (p.Ala431Pro) | Ala431Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1291G>A (p.Ala431Thr) | Ala431Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1424C>T (p.Ala475Val) | Ala475Val | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1438G>A (p.Ala480Thr) | Ala480Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1439C>T (p.Ala480Val) | Ala480Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1502C>A (p.Ala501Glu) | Ala501Glu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1618G>A (p.Ala540Thr) | Ala540Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1817C>A (p.Ala606Asp) | Ala606Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1835C>T (p.Ala612Val) | Ala612Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1879G>A (p.Ala627Thr) | Ala627Thr | P | B | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1880C>T (p.Ala627Val) | Ala627Val | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1892C>A (p.Ala631Asp) | Ala631Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2089G>A (p.Ala697Thr) | Ala697Thr | P | P | B | B | P | P | P |
| NM\_000527.4(LDLR):c.344G>A (p.Arg115His) | Arg115His | P | P | B | B | P | P | P |
| NM\_000527.4(LDLR):c.643C>T (p.Arg215Cys) | Arg215Cys | P | P | P | B | P | P | P |
| NM\_001195800.2(LDLR):c.314-1839G>T | Arg215Ser | P | B | P | B | P | P | P |
| NM\_001195800.2(LDLR):c.314-754C>A | Arg253Pro | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.770G>C (p.Arg257Pro) | Arg257Pro | P | B | P | B | P | B | B |
| NM\_001195798.2(LDLR):c.1049G>A (p.Arg350Gln) | Arg350Gln | P | B | P | B | P | B | B |
| NM\_000527.4(LDLR):c.1217G>C (p.Arg406Pro) | Arg406Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1216C>T (p.Arg406Trp) | Arg406Trp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1230G>T (p.Arg410Ser) | Arg410Ser | P | B | P | P | P | B | P |
| NM\_000527.4(LDLR):c.1247G>A (p.Arg416Gln) | Arg416Gln | P | B | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1247G>T (p.Arg416Leu) | Arg416Leu | P | B | B | P | P | P | P |
| NM\_000527.4(LDLR):c.1246C>T (p.Arg416Trp) | Arg416Trp | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1412G>A (p.Arg471Lys) | Arg471Lys | P | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1558A>G (p.Arg520Gly) | Arg520Gly | P | P | P | B | P | B | P |
| NM\_000527.4(LDLR):c.1897C>T (p.Arg633Cys) | Arg633Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1898G>T (p.Arg633Leu) | Arg633Leu | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2125A>G (p.Arg709Gly) | Arg709Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.241C>T (p.Arg81Cys) | Arg81Cys | P | P | P | P | B | P | P |
| NM\_001195799.2(LDLR):c.190+2369C>A | Arg81Ser | P | B | P | P | B | P | P |
| NM\_000527.4(LDLR):c.262A>G (p.Arg88Gly) | Arg88Gly | P | P | P | B | B | P | P |
| NM\_001195800.2(LDLR):c.314-1980A>T | Asn169Ile | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.947A>G (p.Asn316Ser) | Asn316Ser | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.947A>C (p.Asn316Thr) | Asn316Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1110C>G (p.Asn370Lys) | Asn370Lys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1109A>C (p.Asn370Thr) | Asn370Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1215C>G (p.Asn405Lys) | Asn405Lys | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.1315A>T (p.Asn439Tyr) | Asn439Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1644T>G (p.Asn548Lys) | Asn548Lys | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.1690A>G (p.Asn564Asp) | Asn564Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2475C>A (p.Asn825Lys) | Asn825Lys | P | P | P | P | - | P | P |
| NM\_000527.4(LDLR):c.291C>G (p.Asn97Lys) | Asn97Lys | P | P | P | P | B | B | P |
| NM\_000527.4(LDLR):c.298G>A (p.Asp100Asn) | Asp100Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.299A>G (p.Asp100Gly) | Asp100Gly | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2100A>G | Asp129Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.391G>C (p.Asp131His) | Asp131His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.407A>T (p.Asp136Val) | Asp136Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.415G>A (p.Asp139Asn) | Asp139Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.417C>G (p.Asp139Glu) | Asp139Glu | P | P | P | P | P | B | P |
| NM\_001195800.2(LDLR):c.314-2071G>C | Asp139His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.416A>T (p.Asp139Val) | Asp139Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.503A>C (p.Asp168Ala) | Asp168Ala | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.504C>A (p.Asp168Glu) | Asp168Glu | P | P | P | P | P | B | P |
| NM\_001195800.2(LDLR):c.314-1983A>G | Asp168Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.502G>C (p.Asp168His) | Asp168His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.510C>A (p.Asp170Glu) | Asp170Glu | P | P | B | B | P | P | P |
| NM\_000527.4(LDLR):c.514G>A (p.Asp172Asn) | Asp172Asn | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1970C>G | Asp172Glu | P | P | P | P | P | B | P |
| NM\_001195800.2(LDLR):c.314-1972G>C | Asp172His | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1972G>T | Asp172Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.523G>A (p.Asp175Asn) | Asp175Asn | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1954G>A | Asp178Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.534T>G (p.Asp178Glu) | Asp178Glu | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.533A>G (p.Asp178Gly) | Asp178Gly | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1954G>T | Asp178Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.533A>T (p.Asp178Val) | Asp178Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.661G>A (p.Asp221Asn) | Asp221Asn | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1821G>A | Asp221Tyr | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1820C>G | Asp221Val | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-758G>A | Asp224Ala | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1809C>G | Asp224Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.671A>T (p.Asp224Val) | Asp224Val | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1795T>C | Asp227Val | P | P | P | B | P | P | P |
| NM\_001195800.2(LDLR):c.314-729A>T | Asp256Glu | P | P | B | P | P | P | P |
| NM\_000527.4(LDLR):c.767A>G (p.Asp256Gly) | Asp256Gly | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-711G>A | Asp266Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.796G>T (p.Asp266Tyr) | Asp266Tyr | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+137G>A | Asp266Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.902A>G (p.Asp301Gly) | Asp301Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.901G>T (p.Asp301Tyr) | Asp301Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.910G>A (p.Asp304Asn) | Asp304Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.910G>C (p.Asp304His) | Asp304His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.910G>T (p.Asp304Tyr) | Asp304Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.911A>T (p.Asp304Val) | Asp304Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.920A>G (p.Asp307Gly) | Asp307Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.919G>C (p.Asp307His) | Asp307His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1061A>C (p.Asp354Ala) | Asp354Ala | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1061A>T (p.Asp354Val) | Asp354Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1067A>C (p.Asp356Ala) | Asp356Ala | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1067A>T (p.Asp356Val) | Asp356Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1243G>C (p.Asp415His) | Asp415His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1297G>C (p.Asp433His) | Asp433His | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1297G>T (p.Asp433Tyr) | Asp433Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1414G>T (p.Asp472Tyr) | Asp472Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.139G>C (p.Asp47His) | Asp47His | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1444G>A (p.Asp482Asn) | Asp482Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1444G>C (p.Asp482His) | Asp482His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1444G>T (p.Asp482Tyr) | Asp482Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1475A>G (p.Asp492Gly) | Asp492Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1574A>T (p.Asp525Val) | Asp525Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1603G>A (p.Asp535Asn) | Asp535Asn | P | P | B | P | P | P | P |
| NM\_000527.4(LDLR):c.1603G>T (p.Asp535Tyr) | Asp535Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1705G>T (p.Asp569Tyr) | Asp569Tyr | P | P | B | P | P | P | P |
| NM\_000527.4(LDLR):c.1736A>C (p.Asp579Ala) | Asp579Ala | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1735G>A (p.Asp579Asn) | Asp579Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1736A>G (p.Asp579Gly) | Asp579Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1735G>T (p.Asp579Tyr) | Asp579Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.169G>A (p.Asp57Asn) | Asp57Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1802A>T (p.Asp601Val) | Asp601Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1865A>C (p.Asp622Ala) | Asp622Ala | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1864G>A (p.Asp622Asn) | Asp622Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1952A>T (p.Asp651Val) | Asp651Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2120A>T (p.Asp707Val) | Asp707Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.269A>C (p.Asp90Ala) | Asp90Ala | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.270T>A (p.Asp90Glu) | Asp90Glu | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.269A>G (p.Asp90Gly) | Asp90Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.268G>T (p.Asp90Tyr) | Asp90Tyr | P | P | P | P | P | P | P |
| NM\_001195799.2(LDLR):c.191-2437T>C | Cys104Arg | P | P | P | P | P | P | P |
| NM\_000527.5(LDLR):c.310T>G (p.Cys104Gly) | Cys104Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.311G>C (p.Cys104Ser) | Cys104Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.311G>A (p.Cys104Tyr) | Cys104Tyr | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2162\_314-2161delinsTC | Cys109Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.326G>T (p.Cys109Phe) | Cys109Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.326G>A (p.Cys109Tyr) | Cys109Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.346T>C (p.Cys116Arg) | Cys116Arg | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2139G>T | Cys116Phe | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2125T>G | Cys121Gly | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2124G>T | Cys121Phe | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2125T>A | Cys121Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.362G>A (p.Cys121Tyr) | Cys121Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.382T>C (p.Cys128Arg) | Cys128Arg | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2103G>T | Cys128Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.383G>A (p.Cys128Tyr) | Cys128Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.400T>C (p.Cys134Arg) | Cys134Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.400T>G (p.Cys134Gly) | Cys134Gly | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2084C>G | Cys134Trp | P | P | P | P | P | B | P |
| NM\_001195800.2(LDLR):c.314-2085G>A | Cys134Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.427T>C (p.Cys143Arg) | Cys143Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.428G>T (p.Cys143Phe) | Cys143Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.428G>C (p.Cys143Ser) | Cys143Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.428G>A (p.Cys143Tyr) | Cys143Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.443G>C (p.Cys148Ser) | Cys148Ser | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2042T>G | Cys148Trp | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.443G>A (p.Cys148Tyr) | Cys148Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.463T>G (p.Cys155Gly) | Cys155Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.464G>T (p.Cys155Phe) | Cys155Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.463T>A (p.Cys155Ser) | Cys155Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.478T>C (p.Cys160Arg) | Cys160Arg | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2008T>G | Cys160GLy | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2007\_314-2006delinsTT | Cys160Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.501C>G (p.Cys167Trp) | Cys167Trp | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.500G>A (p.Cys167Tyr) | Cys167Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.517T>C (p.Cys173Arg) | Cys173Arg | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1968G>C | Cys173Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.519C>G (p.Cys173Trp) | Cys173Trp | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.518G>A (p.Cys173Tyr) | Cys173Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.551G>C (p.Cys184Ser) | Cys184Ser | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1934T>G | Cys184Trp | P | P | P | B | P | B | P |
| NM\_000527.4(LDLR):c.551G>A (p.Cys184Tyr) | Cys184Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.589T>G (p.Cys197Gly) | Cys197Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.590G>T (p.Cys197Phe) | Cys197Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.591C>G (p.Cys197Trp) | Cys197Trp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.610T>G (p.Cys204Gly) | Cys204Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.611G>T (p.Cys204Phe) | Cys204Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.611G>C (p.Cys204Ser) | Cys204Ser | P | P | P | P | P | P | P |
| NM\_000527.5(LDLR):c.625T>G (p.Cys209Gly) | Cys209Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.626G>A (p.Cys209Tyr) | Cys209Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.646T>C (p.Cys216Arg) | Cys216Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.647G>A (p.Cys216Tyr) | Cys216Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.664T>C (p.Cys222Arg) | Cys222Arg | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1822T>G | Cys222Gly | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1815A>C | Cys222Trp | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-776T>C | Cys231Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.691T>G (p.Cys231Gly) | Cys231Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.692G>A (p.Cys231Tyr) | Cys231Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.706T>C (p.Cys236Arg) | Cys236Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.706T>G (p.Cys236Gly) | Cys236Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.743G>T (p.Cys248Phe) | Cys248Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.743G>C (p.Cys248Ser) | Cys248Ser | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-779G>A | Cys248Tyr | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-754C>G | Cys255Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.763T>A (p.Cys255Ser) | Cys255Ser | P | P | B | P | P | P | P |
| NM\_000527.4(LDLR):c.782G>T (p.Cys261Phe) | Cys261Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.808T>C (p.Cys270Arg) | Cys270Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.808T>A (p.Cys270Ser) | Cys270Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.809G>A (p.Cys270Tyr) | Cys270Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.826T>G (p.Cys276Gly) | Cys276Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.828C>G (p.Cys276Trp) | Cys276Trp | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.827G>A (p.Cys276Tyr) | Cys276Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.81C>G (p.Cys27Trp) | Cys27Trp | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.850T>C (p.Cys284Arg) | Cys284Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.850T>G (p.Cys284Gly) | Cys284Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.886T>C (p.Cys296Arg) | Cys296Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.887G>C (p.Cys296Ser) | Cys296Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.887G>A (p.Cys296Tyr) | Cys296Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.905G>T (p.Cys302Phe) | Cys302Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.906C>G (p.Cys302Trp) | Cys302Trp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.937T>G (p.Cys313Gly) | Cys313Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.952T>C (p.Cys318Arg) | Cys318Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.953G>T (p.Cys318Phe) | Cys318Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.953G>A (p.Cys318Tyr) | Cys318Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.974G>T (p.Cys325Phe) | Cys325Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.974G>A (p.Cys325Tyr) | Cys325Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.985T>C (p.Cys329Arg) | Cys329Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.986G>T (p.Cys329Phe) | Cys329Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.987C>G (p.Cys329Trp) | Cys329Trp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1012T>C (p.Cys338Arg) | Cys338Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1013G>T (p.Cys338Phe) | Cys338Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1012T>A (p.Cys338Ser) | Cys338Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1013G>A (p.Cys338Tyr) | Cys338Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1020C>G (p.Cys340Trp) | Cys340Trp | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.100T>G (p.Cys34Gly) | Cys34Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.101G>C (p.Cys34Ser) | Cys34Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1055G>T (p.Cys352Phe) | Cys352Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1054T>A (p.Cys352Ser) | Cys352Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1056C>G (p.Cys352Trp) | Cys352Trp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1072T>C (p.Cys358Arg) | Cys358Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1073G>A (p.Cys358Tyr) | Cys358Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1090T>C (p.Cys364Arg) | Cys364Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1091G>C (p.Cys364Ser) | Cys364Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1091G>A (p.Cys364Tyr) | Cys364Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1102T>C (p.Cys368Arg) | Cys368Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1103G>C (p.Cys368Ser) | Cys368Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1129T>G (p.Cys377Gly) | Cys377Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1130G>T (p.Cys377Phe) | Cys377Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1130G>A (p.Cys377Tyr) | Cys377Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1135T>C (p.Cys379Arg) | Cys379Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1135T>G (p.Cys379Gly) | Cys379Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1174T>C (p.Cys392Arg) | Cys392Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.115T>C (p.Cys39Arg) | Cys39Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.116G>T (p.Cys39Phe) | Cys39Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.137G>C (p.Cys46Ser) | Cys46Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.137G>A (p.Cys46Tyr) | Cys46Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.155G>A (p.Cys52Tyr) | Cys52Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.188G>T (p.Cys63Phe) | Cys63Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.188G>A (p.Cys63Tyr) | Cys63Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1999T>C (p.Cys667Arg) | Cys667Arg | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+179G>A | Cys667Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2001T>G (p.Cys667Trp) | Cys667Trp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2000G>A (p.Cys667Tyr) | Cys667Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2030G>T (p.Cys677Phe) | Cys677Phe | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+192C>G | Cys677Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2042G>A (p.Cys681Tyr) | Cys681Tyr | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+249C>G | Cys696Trp | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.2087G>A (p.Cys696Tyr) | Cys696Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2093G>T (p.Cys698Phe) | Cys698Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2131T>G (p.Cys711Gly) | Cys711Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2132G>T (p.Cys711Phe) | Cys711Phe | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+281G>C | Cys711Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.223T>A (p.Cys75Ser) | Cys75Ser | P | P | P | P | P | P | P |
| NM\_001195799.2(LDLR):c.190+2353T>G | Cys75Trp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.224G>A (p.Cys75Tyr) | Cys75Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.244T>G (p.Cys82Gly) | Cys82Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.245G>T (p.Cys82Phe) | Cys82Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.245G>A (p.Cys82Tyr) | Cys82Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.265T>G (p.Cys89Gly) | Cys89Gly | P | P | P | P | P | P | P |
| NM\_001195799.2(LDLR):c.190+2395C>G | Cys89Trp | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.266G>A (p.Cys89Tyr) | Cys89Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.283T>G (p.Cys95Gly) | Cys95Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.284G>T (p.Cys95Phe) | Cys95Phe | P | P | P | P | P | P | P |
| NM\_001195799.2(LDLR):c.190+2411T>A | Cys95Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.762G>T (p.Gln254His) | Gln254His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.761A>C (p.Gln254Pro) | Gln254Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1097A>G (p.Gln366Arg) | Gln366Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1151A>C (p.Gln384Pro) | Gln384Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1342C>A (p.Gln448Lys) | Gln448Lys | P | P | B | B | P | B | P |
| NM\_000527.4(LDLR):c.1979A>G (p.Gln660Arg) | Gln660Arg | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1979A>C (p.Gln660Pro) | Gln660Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2056C>G (p.Gln686Glu) | Gln686Glu | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.301G>A (p.Glu101Lys) | Glu101Lys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.419A>G (p.Glu140Gly) | Glu140Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.418G>A (p.Glu140Lys) | Glu140Lys | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1950A>G | Glu179Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.622G>A (p.Glu208Lys) | Glu208Lys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.683A>C (p.Glu228Ala) | Glu228Ala | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.682G>C (p.Glu228Gln) | Glu228Gln | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.683A>G (p.Glu228Gly) | Glu228Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.682G>A (p.Glu228Lys) | Glu228Lys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.801A>T (p.Glu267Asp) | Glu267Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.862G>A (p.Glu288Lys) | Glu288Lys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.924A>T (p.Glu308Asp) | Glu308Asp | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.949G>A (p.Glu317Lys) | Glu317Lys | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1070A>G (p.Glu357Gly) | Glu357Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1069G>A (p.Glu357Lys) | Glu357Lys | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.1222G>C (p.Glu408Gln) | Glu408Gln | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1222G>A (p.Glu408Lys) | Glu408Lys | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1223A>T (p.Glu408Val) | Glu408Val | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.173A>G (p.Glu58Gly) | Glu58Gly | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.172G>A (p.Glu58Lys) | Glu58Lys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1844A>T (p.Glu615Val) | Glu615Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.355G>A (p.Gly119Arg) | Gly119Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.409G>T (p.Gly137Cys) | Gly137Cys | P | P | P | B | B | P | P |
| NM\_000527.4(LDLR):c.445G>C (p.Gly149Arg) | Gly149Arg | P | P | P | B | P | B | B |
| NM\_000527.4(LDLR):c.527G>T (p.Gly176Val) | Gly176Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.737G>T (p.Gly246Val) | Gly246Val | P | P | P | B | B | P | P |
| NM\_000527.4(LDLR):c.859G>T (p.Gly287Cys) | Gly287Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.859G>A (p.Gly287Ser) | Gly287Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.967G>T (p.Gly323Cys) | Gly323Cys | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.1004G>A (p.Gly335Asp) | Gly335Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1004G>T (p.Gly335Val) | Gly335Val | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1028G>A (p.Gly343Asp) | Gly343Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1027G>A (p.Gly343Ser) | Gly343Ser | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1028G>T (p.Gly343Val) | Gly343Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1118G>A (p.Gly373Asp) | Gly373Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1118G>T (p.Gly373Val) | Gly373Val | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.1145G>T (p.Gly382Val) | Gly382Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1187G>A (p.Gly396Asp) | Gly396Asp | P | P | B | P | P | B | P |
| NM\_000527.4(LDLR):c.1487G>T (p.Gly496Val) | Gly496Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1514G>A (p.Gly505Asp) | Gly505Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1586G>A (p.Gly529Asp) | Gly529Asp | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1633G>T (p.Gly545Trp) | Gly545Trp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1636G>C (p.Gly546Arg) | Gly546Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1637G>A (p.Gly546Asp) | Gly546Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1646G>A (p.Gly549Asp) | Gly549Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1646G>T (p.Gly549Val) | Gly549Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1694G>C (p.Gly565Ala) | Gly565Ala | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1694G>T (p.Gly565Val) | Gly565Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1774G>A (p.Gly592Arg) | Gly592Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1775G>A (p.Gly592Glu) | Gly592Glu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1907G>T (p.Gly636Val) | Gly636Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1988G>C (p.Gly663Ala) | Gly663Ala | P | P | B | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+149G>T | Gly663Glu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2026G>T (p.Gly676Cys) | Gly676Cys | P | P | P | B | B | P | P |
| NM\_000527.4(LDLR):c.2260G>T (p.Gly754Trp) | Gly754Trp | P | B | P | P | - | B | B |
| NM\_000527.4(LDLR):c.2413G>A (p.Gly805Arg) | Gly805Arg | P | B | P | P | - | P | P |
| NM\_000527.4(LDLR):c.2530G>A (p.Gly844Ser) | Gly844Ser | P | B | P | P | - | P | P |
| NM\_000527.4(LDLR):c.292G>A (p.Gly98Ser) | Gly98Ser | P | P | P | P | B | P | P |
| NM\_001195800.2(LDLR):c.314-1855C>G | His211Asp | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.631C>T (p.His211Tyr) | His211Tyr | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.981C>A (p.His327Gln) | His327Gln | P | P | P | B | B | B | P |
| NM\_000527.4(LDLR):c.1454A>G (p.His485Arg) | His485Arg | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1747C>G (p.His583Asp) | His583Asp | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1749C>G (p.His583Gln) | His583Gln | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1747C>T (p.His583Tyr) | His583Tyr | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1968C>G (p.His656Gln) | His656Gln | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-2122A>T | Ile122Phe | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.482T>C (p.Ile161Thr) | Ile161Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.628A>C (p.Ile210Leu) | Ile210Leu | P | B | B | P | P | B | P |
| NM\_000527.4(LDLR):c.629T>C (p.Ile210Thr) | Ile210Thr | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-759T>G | Ile249Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1269C>G (p.Ile423Met) | Ile423Met | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1268T>C (p.Ile423Thr) | Ile423Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1322T>A (p.Ile441Asn) | Ile441Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1322T>C (p.Ile441Thr) | Ile441Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1351A>T (p.Ile451Phe) | Ile451Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1352T>C (p.Ile451Thr) | Ile451Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1463T>G (p.Ile488Ser) | Ile488Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1625T>G (p.Ile542Ser) | Ile542Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1678A>T (p.Ile560Phe) | Ile560Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1754T>C (p.Ile585Thr) | Ile585Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1883T>C (p.Ile628Thr) | Ile628Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.248T>C (p.Ile83Thr) | Ile83Thr | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.44T>C (p.Leu15Pro) | Leu15Pro | P | P | B | P | - | P | P |
| NM\_001195800.2(LDLR):c.314-1995T>C | Leu164Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.613C>G (p.Leu205Val) | Leu205Val | P | P | B | P | P | B | B |
| NM\_000527.4(LDLR):c.1154T>G (p.Leu385Arg) | Leu385Arg | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1154T>C (p.Leu385Pro) | Leu385Pro | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1202T>A (p.Leu401His) | Leu401His | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1265T>C (p.Leu422Pro) | Leu422Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1295T>C (p.Leu432Pro) | Leu432Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1367T>A (p.Leu456His) | Leu456His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1532T>C (p.Leu511Ser) | Leu511Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1664T>C (p.Leu555Pro) | Leu555Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1703T>C (p.Leu568Pro) | Leu568Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1723C>T (p.Leu575Phe) | Leu575Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1744C>T (p.Leu582Phe) | Leu582Phe | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1745T>C (p.Leu582Pro) | Leu582Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1814T>C (p.Leu605Pro) | Leu605Pro | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1833G>T (p.Leu611Phe) | Leu611Phe | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1925T>C (p.Leu642Ser) | Leu642Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1936C>A (p.Leu646Ile) | Leu646Ile | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1973T>C (p.Leu658Pro) | Leu658Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2044C>T (p.Leu682Phe) | Leu682Phe | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.2396T>G (p.Leu799Arg) | Leu799Arg | P | P | P | P | - | P | B |
| NM\_000527.4(LDLR):c.2422C>G (p.Leu808Val) | Leu808Val | P | B | B | P | - | B | P |
| NM\_000527.4(LDLR):c.669G>C (p.Lys223Asn) | Lys223Asn | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.932A>C (p.Lys311Thr) | Lys311Thr | P | P | P | B | B | P | P |
| NM\_000527.4(LDLR):c.1179G>C (p.Lys393Asn) | Lys393Asn | P | B | P | B | P | B | P |
| NM\_000527.4(LDLR):c.1177A>C (p.Lys393Gln) | Lys393Gln | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1521G>C (p.Lys507Asn) | Lys507Asn | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1520A>C (p.Lys507Thr) | Lys507Thr | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.1525A>G (p.Lys509Glu) | Lys509Glu | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.2446A>C (p.Lys816Gln) | Lys816Gln | P | P | P | B | - | P | P |
| NM\_000527.4(LDLR):c.3G>A (p.Met1Ile) | Met1Ile | P | B | P | B | - | P | P |
| NM\_000527.4(LDLR):c.1A>T (p.Met1Leu) | Met1Leu | P | B | B | P | - | B | P |
| NM\_000527.4(LDLR):c.1234A>C (p.Met412Leu) | Met412Leu | P | B | B | P | P | B | P |
| NM\_000527.4(LDLR):c.1235T>C (p.Met412Thr) | Met412Thr | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1592T>G (p.Met531Arg) | Met531Arg | P | P | P | B | P | P | P |
| NM\_001195800.2(LDLR):c.314-2109T>A | Phe126Tyr | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.458T>G (p.Phe153Cys) | Phe153Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.457T>G (p.Phe153Val) | Phe153Val | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.722T>G (p.Phe241Cys) | Phe241Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.722T>C (p.Phe241Ser) | Phe241Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.846C>A (p.Phe282Leu) | Phe282Leu | P | P | B | P | B | B | P |
| NM\_000527.4(LDLR):c.1205T>C (p.Phe402Ser) | Phe402Ser | P | P | B | P | P | P | P |
| NM\_000527.4(LDLR):c.1207T>C (p.Phe403Leu) | Phe403Leu | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1856T>G (p.Phe619Cys) | Phe619Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1886T>G (p.Phe629Cys) | Phe629Cys | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+229T>G | Phe694Val | P | P | B | P | P | B | P |
| NM\_000527.4(LDLR):c.431C>T (p.Pro144Leu) | Pro144Leu | P | P | P | B | B | B | P |
| NM\_000527.4(LDLR):c.542C>T (p.Pro181Leu) | Pro181Leu | P | P | P | B | P | B | P |
| NM\_000527.4(LDLR):c.586C>A (p.Pro196Thr) | Pro196Thr | P | P | P | B | P | B | P |
| NM\_001195798.2(LDLR):c.926C>A (p.Pro309His) | Pro309His | P | P | P | B | B | P | P |
| NM\_000527.4(LDLR):c.1427C>T (p.Pro476Leu) | Pro476Leu | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1426C>T (p.Pro476Ser) | Pro476Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1555C>T (p.Pro519Ser) | Pro519Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1577C>G (p.Pro526Arg) | Pro526Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1576C>A (p.Pro526Thr) | Pro526Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1688C>A (p.Pro563His) | Pro563His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1823C>G (p.Pro608Arg) | Pro608Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1823C>T (p.Pro608Leu) | Pro608Leu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1822C>T (p.Pro608Ser) | Pro608Ser | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1945C>T (p.Pro649Ser) | Pro649Ser | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+203C>A | Pro685Gln | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2054C>T (p.Pro685Leu) | Pro685Leu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2053C>A (p.Pro685Thr) | Pro685Thr | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.2476C>T (p.Pro826Ser) | Pro826Ser | P | P | P | P | - | P | P |
| NM\_000527.4(LDLR):c.2476C>A (p.Pro826Thr) | Pro826Thr | P | P | P | P | - | P | P |
| NM\_000527.4(LDLR):c.251C>T (p.Pro84Leu) | Pro84Leu | P | P | P | P | B | P | P |
| NM\_001195800.2(LDLR):c.314-2016G>A | Ser157Asn | P | B | B | P | P | B | B |
| NM\_001195800.2(LDLR):c.314-2013C>G | Ser158Cys | P | B | P | P | P | B | B |
| NM\_000527.4(LDLR):c.529T>C (p.Ser177Pro) | Ser177Pro | P | P | P | B | P | P | P |
| NM\_001195800.2(LDLR):c.314-1857T>A | Ser206Arg | P | P | P | B | P | B | P |
| NM\_001195800.2(LDLR):c.314-1802G>T | Ser226Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.731C>G (p.Ser244Cys) | Ser244Cys | P | B | B | P | B | P | B |
| NM\_001195800.2(LDLR):c.314-725A>T | Ser265Cys | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.858C>A (p.Ser286Arg) | Ser286Arg | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.977C>G (p.Ser326Cys) | Ser326Cys | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.977C>T (p.Ser326Phe) | Ser326Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1330T>C (p.Ser444Pro) | Ser444Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1339T>C (p.Ser447Pro) | Ser447Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1408A>G (p.Ser470Gly) | Ser470Gly | P | B | B | B | P | B | B |
| NM\_000527.4(LDLR):c.1495T>C (p.Ser499Pro) | Ser499Pro | P | P | B | B | P | P | P |
| NM\_000527.4(LDLR):c.1738T>C (p.Ser580Pro) | Ser580Pro | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1829C>G (p.Ser610Cys) | Ser610Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1829C>T (p.Ser610Phe) | Ser610Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1943C>T (p.Ser648Phe) | Ser648Phe | P | P | P | P | P | B | B |
| NM\_000527.4(LDLR):c.1942T>C (p.Ser648Pro) | Ser648Pro | P | B | B | P | P | B | B |
| NM\_001195800.2(LDLR):c.314-2046C>T | Thr147Ile | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1210A>T (p.Thr404Ser) | Thr404Ser | P | P | B | B | P | B | P |
| NM\_000527.4(LDLR):c.1361C>A (p.Thr454Asn) | Thr454Asn | P | P | P | P | P | P | B |
| NM\_000527.4(LDLR):c.1472C>A (p.Thr491Asn) | Thr491Asn | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1529C>T (p.Thr510Met) | Thr510Met | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1601C>A (p.Thr534Asn) | Thr534Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1862C>G (p.Thr621Arg) | Thr621Arg | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1904C>T (p.Thr635Ile) | Thr635Ile | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.28T>A (p.Trp10Arg) | Trp10Arg | P | P | P | P | - | P | B |
| NM\_001195800.2(LDLR):c.314-1993T>G | Trp165Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.915G>C (p.Trp305Cys) | Trp305Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1329G>T (p.Trp443Cys) | Trp443Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1447T>C (p.Trp483Arg) | Trp483Arg | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1448G>T (p.Trp483Leu) | Trp483Leu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1468T>C (p.Trp490Arg) | Trp490Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1468T>G (p.Trp490Gly) | Trp490Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1597T>C (p.Trp533Arg) | Trp533Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1606T>G (p.Trp536Gly) | Trp536Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1729T>C (p.Trp577Arg) | Trp577Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1729T>G (p.Trp577Gly) | Trp577Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1730G>C (p.Trp577Ser) | Trp577Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1858T>C (p.Trp620Arg) | Trp620Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.259T>C (p.Trp87Arg) | Trp87Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.259T>G (p.Trp87Gly) | Trp87Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1007A>G (p.Tyr336Cys) | Tyr336Cys | P | P | P | P | P | B | B |
| NM\_000527.4(LDLR):c.1124A>C (p.Tyr375Ser) | Tyr375Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1255T>G (p.Tyr419Asp) | Tyr419Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1256A>G (p.Tyr419Cys) | Tyr419Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1324T>A (p.Tyr442Asn) | Tyr442Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1325A>G (p.Tyr442Cys) | Tyr442Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1324T>C (p.Tyr442His) | Tyr442His | P | P | P | P | P | P | P |
| NM\_001195798.2(LDLR):c.1594T>A (p.Tyr532Asn) | Tyr532Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1727A>G (p.Tyr576Cys) | Tyr576Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1727A>C (p.Tyr576Ser) | Tyr576Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2482T>C (p.Tyr828His) | Tyr828His | P | P | P | P | - | P | P |
| NM\_000527.4(LDLR):c.2483A>C (p.Tyr828Ser) | Tyr828Ser | P | P | P | P | - | P | P |
| NM\_001195800.2(LDLR):c.314-2106T>A | VAl127Asp | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+148T>A | Val271Ile | P | B | B | P | B | P | B |
| NM\_000527.4(LDLR):c.1285G>T (p.Val429Leu) | Val429Leu | P | B | B | B | P | P | P |
| NM\_000527.4(LDLR):c.1285G>A (p.Val429Met) | Val429Met | P | B | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1567G>A (p.Val523Met) | Val523Met | P | B | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1571T>G (p.Val524Gly) | Val524Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1733T>C (p.Val578Ala) | Val578Ala | P | P | B | P | P | B | P |
| NM\_000527.4(LDLR):c.1916T>G (p.Val639Gly) | Val639Gly | P | B | B | P | - | B | P |
| NM\_000527.4(LDLR):c.2479G>T (p.Val827Phe) | Val827Phe | P | P | P | B | B | P | P |
| NM\_000527.4(LDLR):c.1195G>A (p.Ala399Thr) | Ala399Thr | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1438G>C (p.Ala480Pro) | Ala480Pro | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1502C>T (p.Ala501Val) | Ala501Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1880C>A (p.Ala627Asp) | Ala627Asp | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+268G>A | Ala697Pro | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.644G>A (p.Arg215His) | Arg215His | P | P | B | P | P | B | B |
| NM\_000527.4(LDLR):c.898A>G (p.Arg300Gly) | Arg300Gly | P | P | P | P | B | B | B |
| NM\_000527.5(LDLR):c.1228A>G (p.Arg410Gly) | Arg410Gly | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.1247G>C (p.Arg416Pro) | Arg416Pro | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1784G>T (p.Arg595Leu) | Arg595Leu | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.232C>T (p.Arg78Cys) | Arg78Cys | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.263G>A (p.Arg88Lys) | Arg88Lys | P | P | B | P | B | B | B |
| NM\_000527.4(LDLR):c.965A>T (p.Asn322Ile) | Asn322Ile | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.2473A>G (p.Asn825Asp) | Asn825Asp | P | P | P | B | - | P | P |
| NM\_000527.4(LDLR):c.300C>A (p.Asp100Glu) | Asp100Glu | P | P | P | P | P | B | P |
| NM\_001195800.2(LDLR):c.314-2089G>A | Asp133Asn | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.416A>G (p.Asp139Gly) | Asp139Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.502G>A (p.Asp168Asn) | Asp168Asn | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1984G>T | Asp168Tyr | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.515A>G (p.Asp172Gly) | Asp172Gly | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1963G>T | Asp175Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.532G>C (p.Asp178His) | Asp178His | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.662A>G (p.Asp221Gly) | Asp221Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.670G>A (p.Asp224Asn) | Asp224Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.681C>A (p.Asp227Glu) | Asp227Glu | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.796G>A (p.Asp266Asn) | Asp266Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.902A>C (p.Asp301Ala) | Asp301Ala | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.912C>G (p.Asp304Glu) | Asp304Glu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.921T>G (p.Asp307Glu) | Asp307Glu | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.1061A>G (p.Asp354Gly) | Asp354Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.108C>A (p.Asp36Glu) | Asp36Glu | P | P | P | P | B | B | P |
| NM\_000527.4(LDLR):c.1335C>A (p.Asp445Glu) | Asp445Glu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1445A>G (p.Asp482Gly) | Asp482Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1474G>C (p.Asp492His) | Asp492His | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1705G>A (p.Asp569Asn) | Asp569Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1737C>G (p.Asp579Glu) | Asp579Glu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1801G>T (p.Asp601Tyr) | Asp601Tyr | P | P | P | P | P | P | B |
| NM\_000527.4(LDLR):c.1951G>T (p.Asp651Tyr) | Asp651Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.268G>A (p.Asp90Asn) | Asp90Asn | P | P | P | P | B | P | P |
| NM\_001195799.2(LDLR):c.190+2408G>T | Asp94Tyr | P | P | P | P | P | P | P |
| NM\_001195799.2(LDLR):c.191-2435T>G | Cys104Trp | P | P | P | P | P | B | P |
| NM\_001195800.2(LDLR):c.314-2160G>C | Cys109Ser | P | P | B | P | P | P | P |
| NM\_000527.4(LDLR):c.361T>C (p.Cys121Arg) | Cys121Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.363C>G (p.Cys121Trp) | Cys121Trp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.383G>C (p.Cys128Ser) | Cys128Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.401G>T (p.Cys134Phe) | Cys134Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.427T>G (p.Cys143Gly) | Cys143Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.442T>C (p.Cys148Arg) | Cys148Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.463T>C (p.Cys155Arg) | Cys155Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.464G>A (p.Cys155Tyr) | Cys155Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.499T>C (p.Cys167Arg) | Cys167Arg | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1969T>G | Cys173Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.550T>C (p.Cys184Arg) | Cys184Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.589T>C (p.Cys197Arg) | Cys197Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.590G>A (p.Cys197Tyr) | Cys197Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.611G>A (p.Cys204Tyr) | Cys204Tyr | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1824A>T | Cys216Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.665G>T (p.Cys222Phe) | Cys222Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.693C>G (p.Cys231Trp) | Cys231Trp | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.742T>G (p.Cys248Gly) | Cys248Gly | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-760\_314-759inv | Cys255Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.782G>A (p.Cys261Tyr) | Cys261Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.826T>C (p.Cys276Arg) | Cys276Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.79T>C (p.Cys27Arg) | Cys27Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.865T>G (p.Cys289Gly) | Cys289Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.904T>C (p.Cys302Arg) | Cys302Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.938G>A (p.Cys313Tyr) | Cys313Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.973T>C (p.Cys325Arg) | Cys325Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.985T>G (p.Cys329Gly) | Cys329Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1012T>G (p.Cys338Gly) | Cys338Gly | P | P | P | P | P | P | P |
| NM\_001195798.2(LDLR):c.1019\_1020delinsTG (p.Cys340Leu) | Cys340Leu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1054T>C (p.Cys352Arg) | Cys352Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1055G>A (p.Cys352Tyr) | Cys352Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1091G>T (p.Cys364Phe) | Cys364Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1102T>G (p.Cys368Gly) | Cys368Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1130G>C (p.Cys377Ser) | Cys377Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1136G>A (p.Cys379Tyr) | Cys379Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.136T>G (p.Cys46Gly) | Cys46Gly | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.187T>C (p.Cys63Arg) | Cys63Arg | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+191G>C | Cys667Phe | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2029T>C (p.Cys677Arg) | Cys677Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.202T>C (p.Cys68Arg) | Cys68Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2093G>A (p.Cys698Tyr) | Cys698Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2132G>A (p.Cys711Tyr) | Cys711Tyr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2407T>C (p.Cys803Arg) | Cys803Arg | P | P | B | P | - | B | B |
| NM\_000527.4(LDLR):c.265T>C (p.Cys89Arg) | Cys89Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.283T>C (p.Cys95Arg) | Cys95Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1097A>C (p.Gln366Pro) | Gln366Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1978C>A (p.Gln660Lys) | Gln660Lys | P | P | B | P | P | P | P |
| NM\_000527.4(LDLR):c.420G>T (p.Glu140Asp) | Glu140Asp | P | P | P | B | P | P | P |
| NM\_001195800.2(LDLR):c.314-1951G>A | Glu179Lys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.684G>C (p.Glu228Asp) | Glu228Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.718G>A (p.Glu240Lys) | Glu240Lys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.922G>A (p.Glu308Lys) | Glu308Lys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1223A>C (p.Glu408Ala) | Glu408Ala | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1252G>A (p.Glu418Lys) | Glu418Lys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2140G>C (p.Glu714Gln) | Glu714Gln | P | B | B | P | B | P | P |
| NM\_000527.4(LDLR):c.409G>A (p.Gly137Ser) | Gly137Ser | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.805G>A (p.Gly269Ser) | Gly269Ser | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.967G>A (p.Gly323Ser) | Gly323Ser | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1027G>T (p.Gly343Cys) | Gly343Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1117G>T (p.Gly373Cys) | Gly373Cys | P | P | P | B | B | P | P |
| NM\_000527.4(LDLR):c.1433G>A (p.Gly478Glu) | Gly478Glu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1633G>C (p.Gly545Arg) | Gly545Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1637G>T (p.Gly546Val) | Gly546Val | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1694G>A (p.Gly565Asp) | Gly565Asp | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1906G>A (p.Gly636Ser) | Gly636Ser | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2026G>C (p.Gly676Arg) | Gly676Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2531G>A (p.Gly844Asp) | Gly844Asp | P | P | P | P | - | P | P |
| NM\_000527.4(LDLR):c.632A>T (p.His211Leu) | His211Leu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1748A>G (p.His583Arg) | His583Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1820A>G (p.His607Arg) | His607Arg | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1843C>A | Ile210Asn | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.869T>G (p.Ile290Ser) | Ile290Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1323C>G (p.Ile441Met) | Ile441Met | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1463T>A (p.Ile488Asn) | Ile488Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1754T>A (p.Ile585Asn) | Ile585Asn | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.44T>A (p.Leu15His) | Leu15His | P | B | P | P | - | P | P |
| NM\_000527.4(LDLR):c.1016T>C (p.Leu339Pro) | Leu339Pro | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.1241T>G (p.Leu414Arg) | Leu414Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1436T>C (p.Leu479Pro) | Leu479Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1702C>G (p.Leu568Val) | Leu568Val | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1796T>G (p.Leu599Trp) | Leu599Trp | P | P | P | P | P | P | B |
| NM\_000527.4(LDLR):c.1937T>A (p.Leu646Gln) | Leu646Gln | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+194T>C | Leu682Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.880A>G (p.Lys294Glu) | Lys294Glu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1231A>G (p.Lys411Glu) | Lys411Glu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1743A>T (p.Lys581Asn) | Lys581Asn | P | B | P | P | P | B | P |
| NM\_000527.4(LDLR):c.1A>G (p.Met1Val) | Met1Val | P | B | B | B | - | B | P |
| NM\_000527.4(LDLR):c.377T>C (p.Phe126Ser) | Phe126Ser | P | P | P | P | P | P | P |
| NM\_001195800.2(LDLR):c.314-1868T>G | Phe202Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.95T>G (p.Phe32Cys) | Phe32Cys | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.1856T>C (p.Phe619Ser) | Phe619Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.485C>T (p.Pro162Leu) | Pro162Leu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1081C>T (p.Pro361Ser) | Pro361Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1555C>A (p.Pro519Thr) | Pro519Thr | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1687C>T (p.Pro563Ser) | Pro563Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1822C>A (p.Pro608Thr) | Pro608Thr | P | P | P | B | P | P | P |
| NM\_001195803.2(LDLR):c.1606+202C>T | Pro685Ser | P | P | P | P | P | P | P |
| NM\_001195799.2(LDLR):c.190+2379C>G | Pro84Arg | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.530C>T (p.Ser177Leu) | Ser177Leu | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.676T>C (p.Ser226Pro) | Ser226Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.917C>T (p.Ser306Leu) | Ser306Leu | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.1340C>G (p.Ser447Cys) | Ser447Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.166T>C (p.Ser56Pro) | Ser56Pro | P | P | P | P | B | P | P |
| NM\_000527.4(LDLR):c.1942T>G (p.Ser648Ala) | Ser648Ala | P | B | B | P | P | P | B |
| NM\_000527.4(LDLR):c.1211C>T (p.Thr404Ile) | Thr404Ile | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1489A>C (p.Thr497Pro) | Thr497Pro | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.185C>G (p.Thr62Arg) | Thr62Arg | P | P | P | B | B | P | P |
| NM\_000527.4(LDLR):c.641G>C (p.Trp214Ser) | Trp214Ser | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1449G>C (p.Trp483Cys) | Trp483Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1469G>T (p.Trp490Leu) | Trp490Leu | P | P | P | B | P | P | P |
| NM\_000527.4(LDLR):c.1731G>C (p.Trp577Cys) | Trp577Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1860G>C (p.Trp620Cys) | Trp620Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1124A>G (p.Tyr375Cys) | Tyr375Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1255T>C (p.Tyr419His) | Tyr419His | P | P | P | P | P | B | P |
| NM\_000527.4(LDLR):c.1466A>G (p.Tyr489Cys) | Tyr489Cys | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.2483A>G (p.Tyr828Cys) | Tyr828Cys | P | P | P | P | - | P | P |
| NM\_000527.4(LDLR):c.380T>G (p.Val127Gly) | Val127Gly | P | B | B | P | P | B | P |
| NM\_000527.4(LDLR):c.1441G>A (p.Val481Met) | Val481Met | P | B | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1853T>G (p.Val618Gly) | Val618Gly | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1310A>G (p.Asn437Ser) | Asn564Ser | P | P | P | P | P | P | P |
| NM\_000527.5(LDLR):c.1736A>T (p.Asp579Val) | Asp579Val | P | P | P | P | P | P | P |
| NM\_000527.5(LDLR):c.2100C>G (p.Asp700Glu) | Asp700Glu | P | P | P | B | P | B | B |
| NM\_000527.5(LDLR):c.325T>G (p.Cys109Gly) | Cys109Gly | P | P | P | P | P | P | B |
| NM\_000527.5(LDLR):c.401G>C (p.Cys134Ser) | Cys134Ser | P | P | P | P | P | P | B |
| NM\_000527.5(LDLR):c.665G>A (p.Cys222Tyr) | Cys222Tyr | P | P | P | P | P | P | P |
| NM\_000527.5(LDLR):c.2043C>G (p.Cys681Trp) | Cys681Trp | P | P | P | P | P | B | P |
| NM\_001195800.2(LDLR):c.314-1881T>C | Glu201Lys | P | P | P | P | P | P | P |
| NM\_001195803.2(LDLR):c.1606+289G>A | Glu714Lys | P | B | B | B | P | P | P |
| NM\_000527.5(LDLR):c.1981C>G (p.Pro661Ala) | Pro661Ala | P | P | B | P | P | B | P |
| NM\_000527.5(LDLR):c.2119G>A (p.Asp707Asn) | Asp707Asn | P | B | P | B | P | P | P |
| NM\_000527.5(LDLR):c.764G>A (p.Cys255Tyr) | Cys255Tyr | P | P | P | P | P | P | P |
| NM\_000527.5(LDLR):c.376T>C (p.Phe126Leu) | Phe126Leu | P | P | P | P | P | P | P |
| NM\_000527.5(LDLR):c.1432G>A (p.Gly478Arg) | Gly478Arg | P | P | P | P | P | P | P |
| NM\_000527.4(LDLR):c.1595A>G (p.Tyr532Cys) | Tyr532Cys | P | P | P | P | P | P | P |

CS=Pathogenicity from ClinVar database P=Pathogenic B=Benign

Table S11: Number of variants correctly predicted by n pathogenicity-predictive software.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Correctly predicted by n software | Variant number | MLb-LDLr | PolyPhen-2 | SIFT | SFIP-MutID | CADD | Mutation Taster |
| 0 | 1 | - | - | - | - | - | - |
| 1 | 3 | - | - | - | 2 | - | 1 |
| 2 | 17 | 4 | 4 | 13 | 4 | 5 | 4 |
| 3 | 27 | 15 | 11 | 15 | 15 | 11 | 14 |
| 4 | 62 | 48 | 49 | 34 | 27 | 44 | 46 |
| 5 | 181 | 162 | 171 | 125 | 120 | 151 | 176 |
| 6 | 453 | 453 | 453 | 453 | 453 | 453 | 453 |

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