



Sustainable Catalysis: Methods and Computation

WHAT DO WE DO IN OUR RESEARCH GROUP?

- ✓ Development of new reactions
- ✓ Peptide modifications
- ✓ Mechanism elucidation
- ✓ Click Chemistry
- ✓ Metal Catalysis
- ✓ Organocatalysis
- ✓ Catalysis with Enzymes
- ✓ Pro-Drug Research



Where are we?

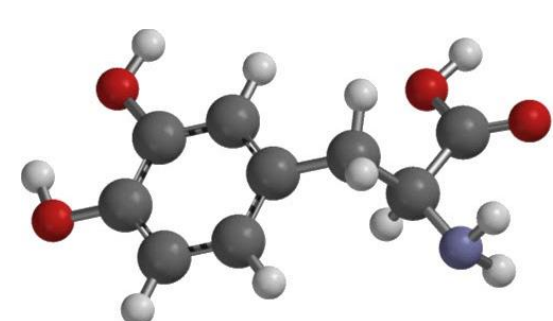
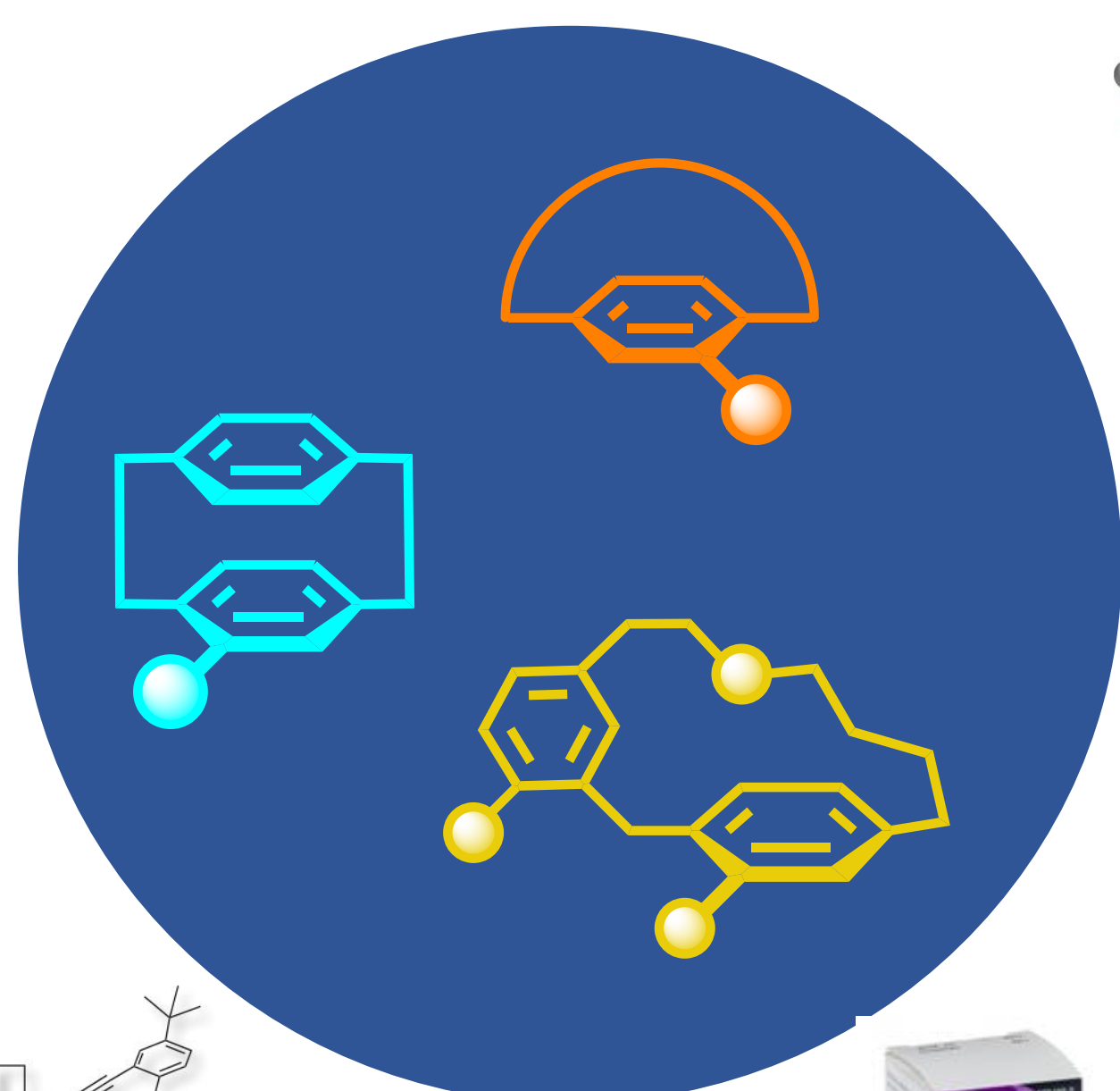
Joxe Mari Korta
4th Floor

HOW?

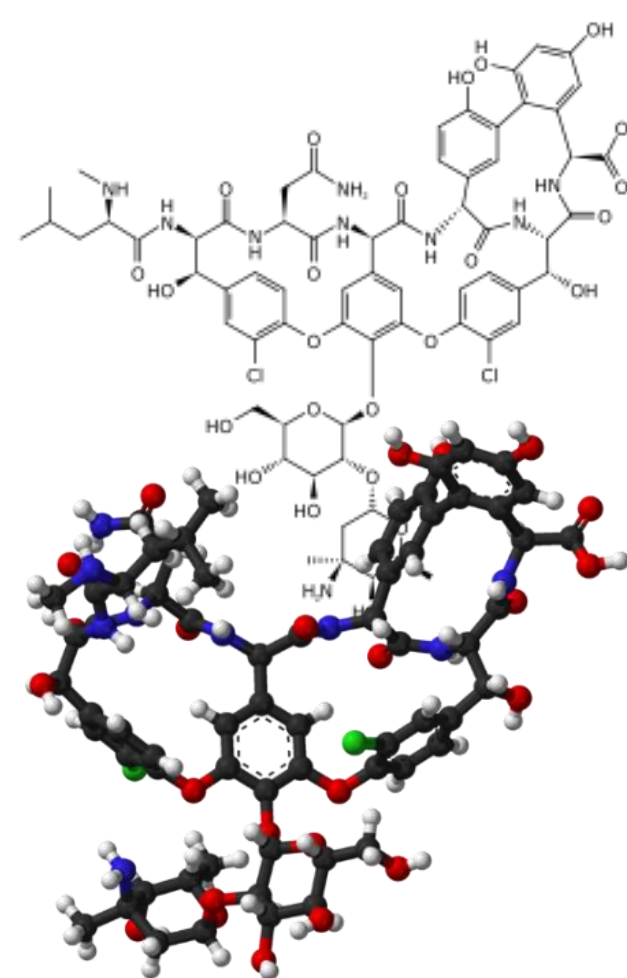
PLANAR CHIRALITY



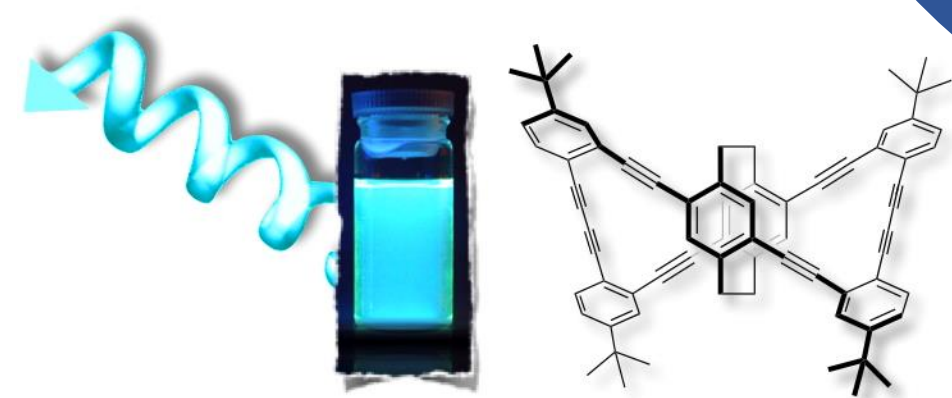
Rosa López



Catalysts



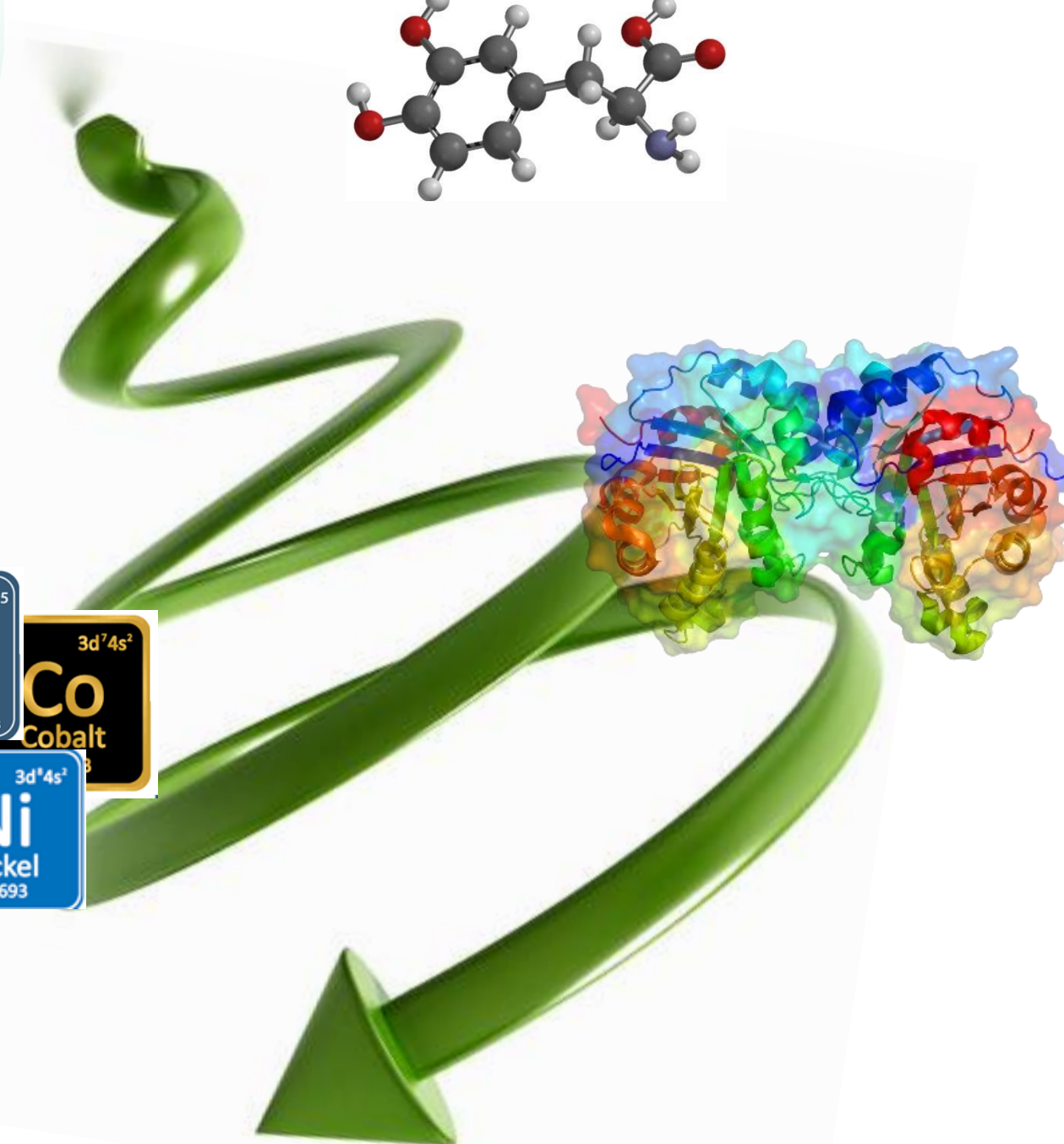
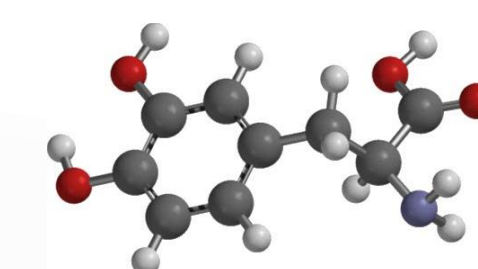
New Drugs



New Materials

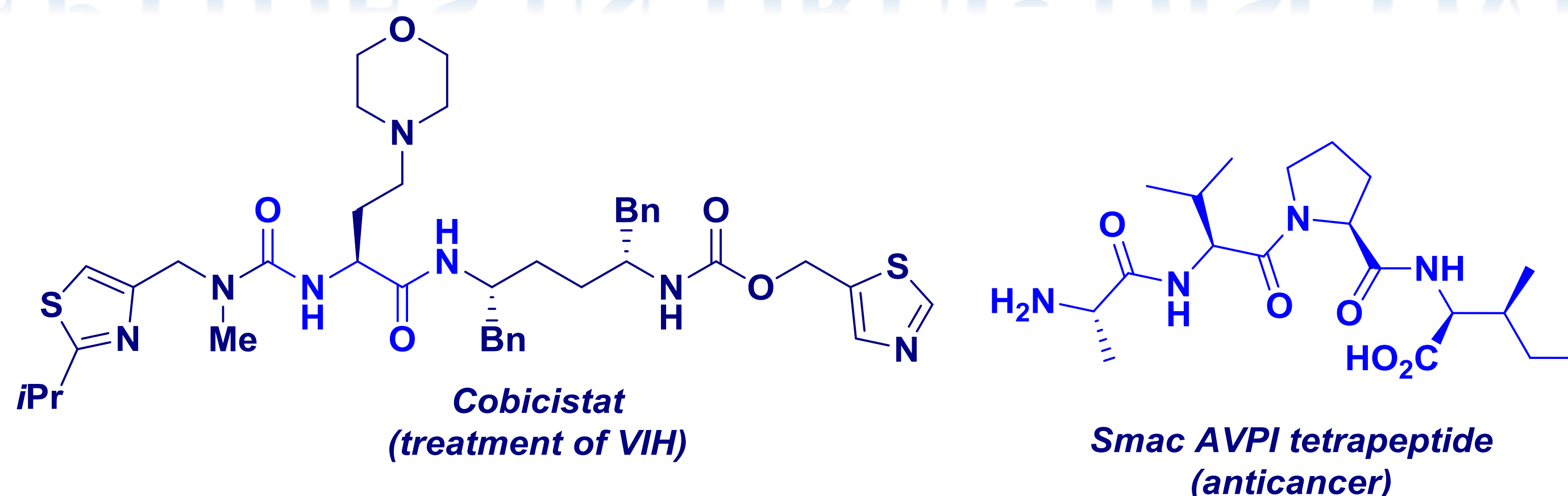
ASYMMETRIC CATALYSIS

Achiral raw materials



Unconventional Chiral Molecules

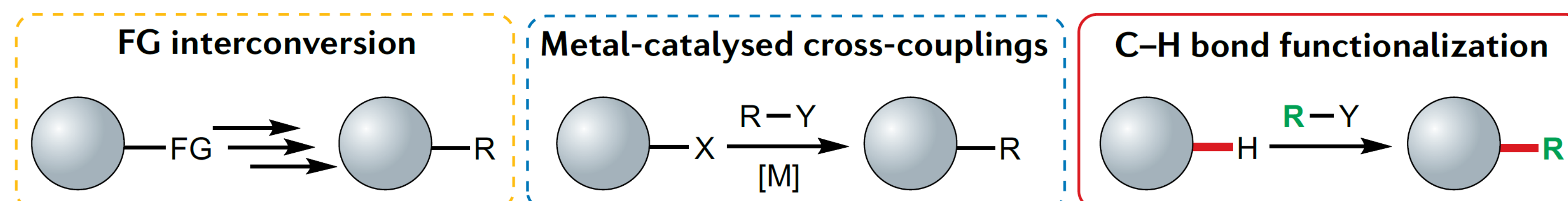
PEPTIDES IN DRUG DISCOVERY



Arkaitz Correa

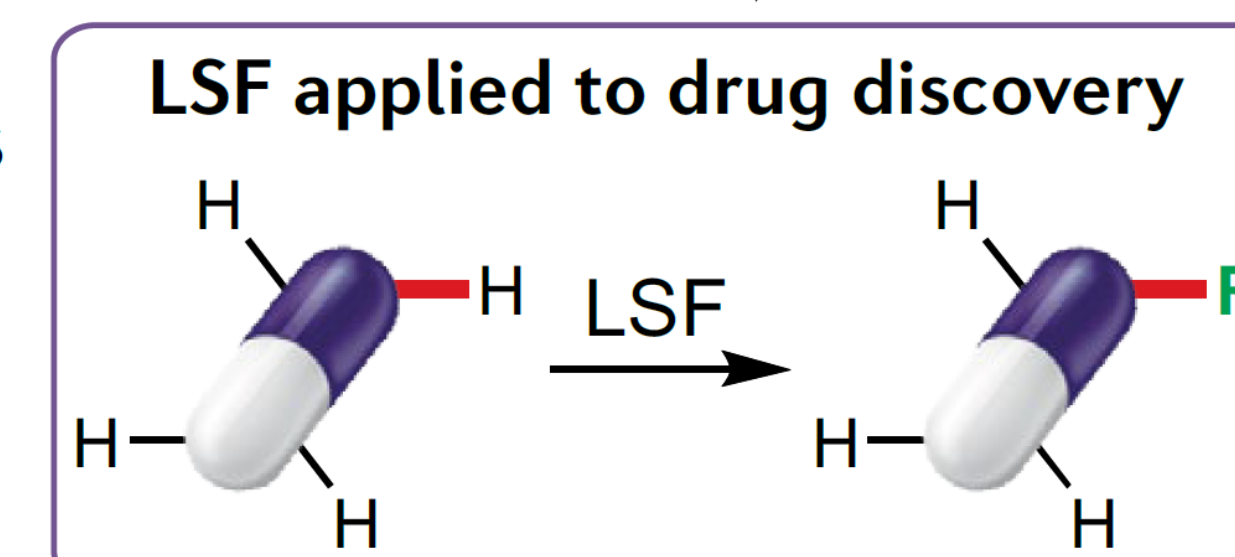
Late-Stage Modification of Peptides
C-H Functionalization
Synthesis of Peptidomimetics

a Major evolutions in organic synthesis



- ✗ Pre-functionalized substrates
- ✗ Multistep synthesis
- ✗ Waste generation
- ✗ Time-consuming

- ✓ New disconnections
- ✓ Step economy
- ✓ Sustainability
- ✓ Efficiency





Sustainable Catalysis: Methods and Computation

WHAT DO WE DO IN OUR RESEARCH GROUP?

- ✓ Development of new reactions
- ✓ Peptide modifications
- ✓ Mechanism elucidation
- ✓ Click-Chemistry
- ✓ Metal Catalysis
- ✓ Organocatalysis
- ✓ Catalysis with Enzymes
- ✓ Pro-Drug research



Where are we?

Joxe Mari Korta
4th Floor

HOW?

TRIAZOLES FOR THERAPY

- ★ Multiple Sclerosis
- ★ Duchenne Muscular Dystrophy

“In vitro” “In vivo” Testing

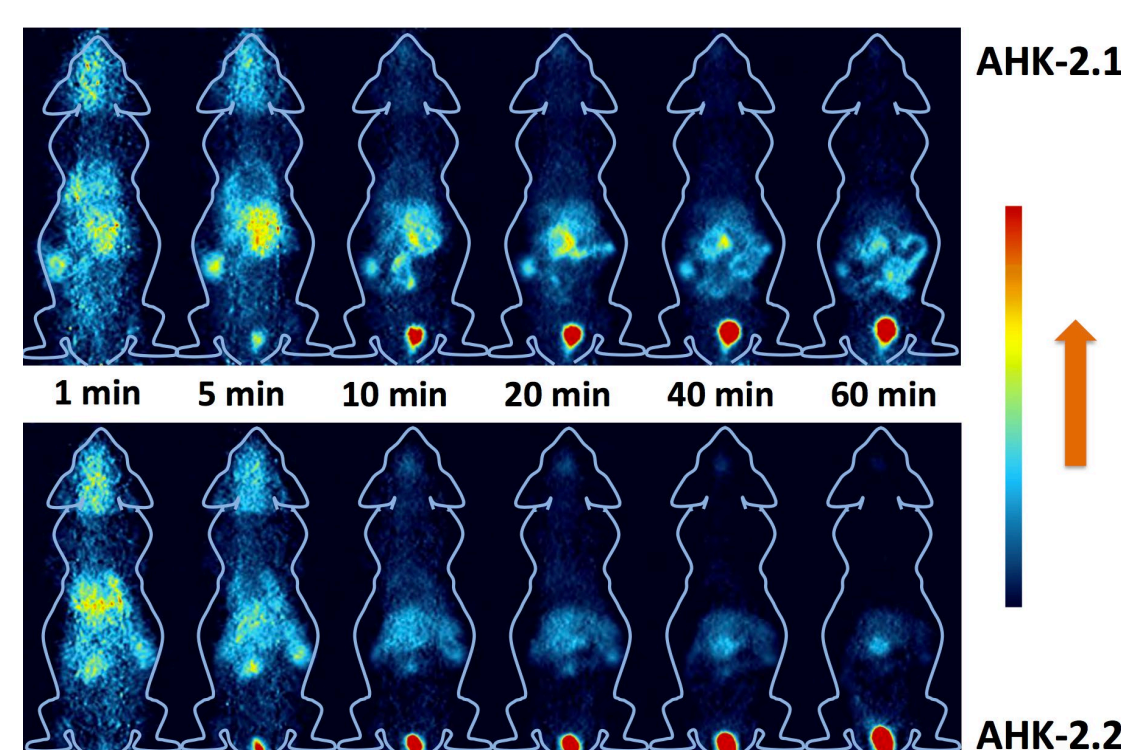
(In collaboration with Biodonostia Institute)



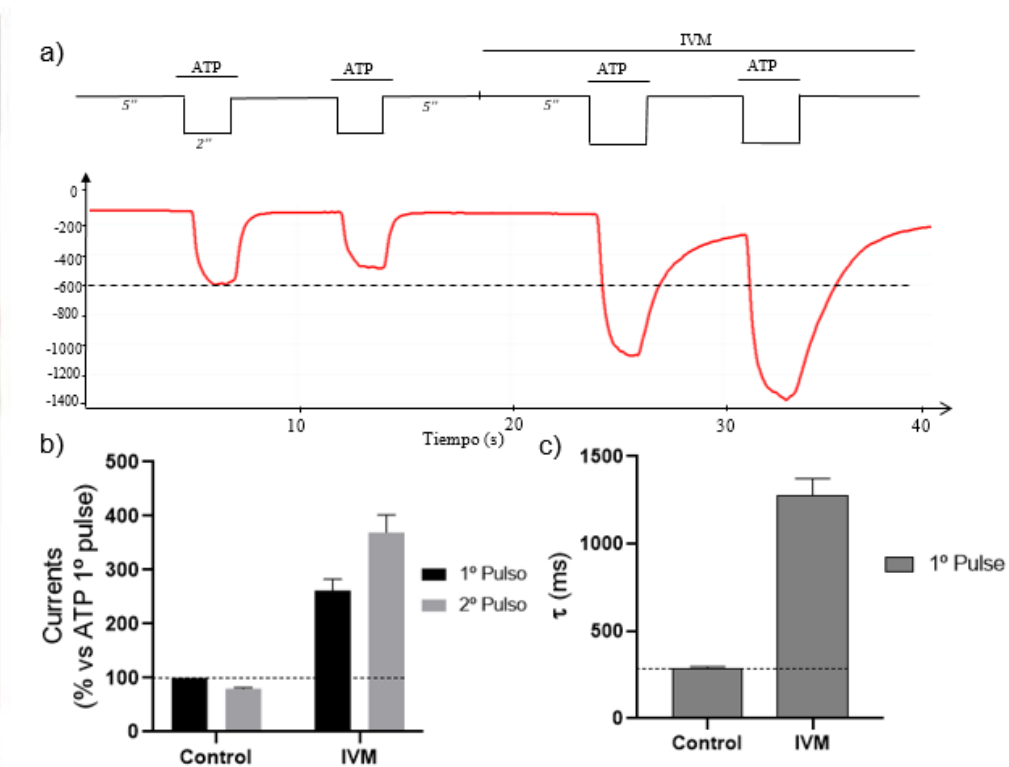
Maialen Sagartzazu



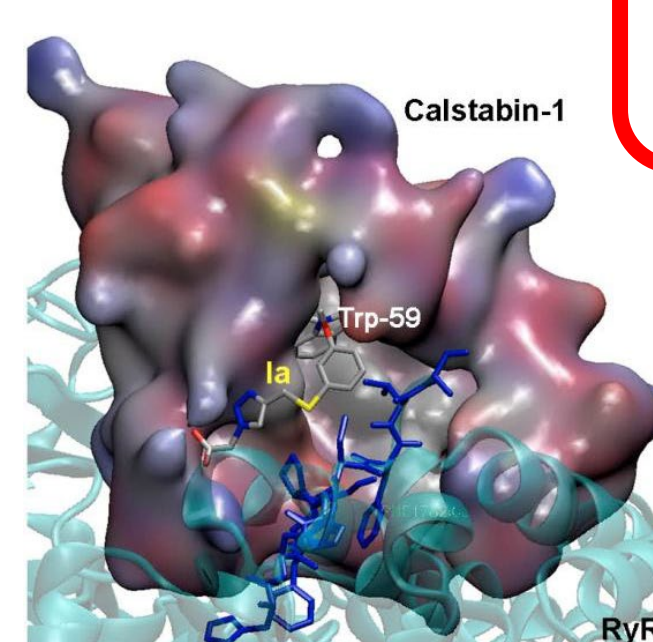
Jesus Maria Aizpurua



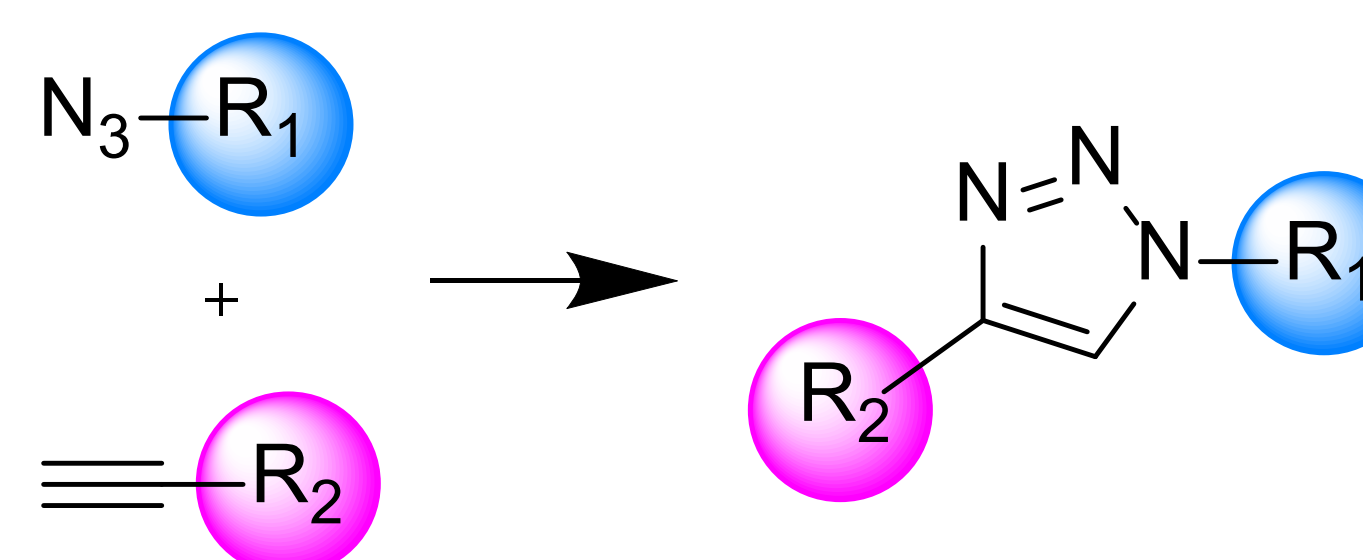
Dynamometer for grip strength determination



Computational design of novel molecules



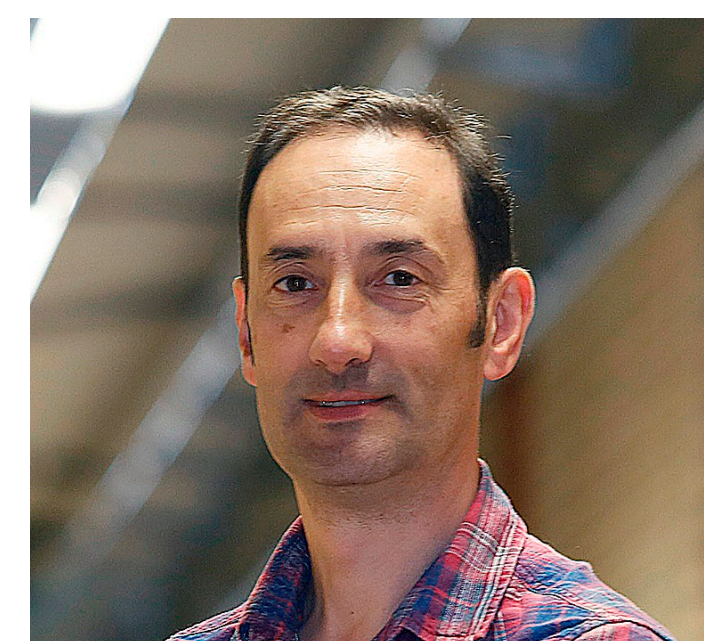
“Click” synthesis



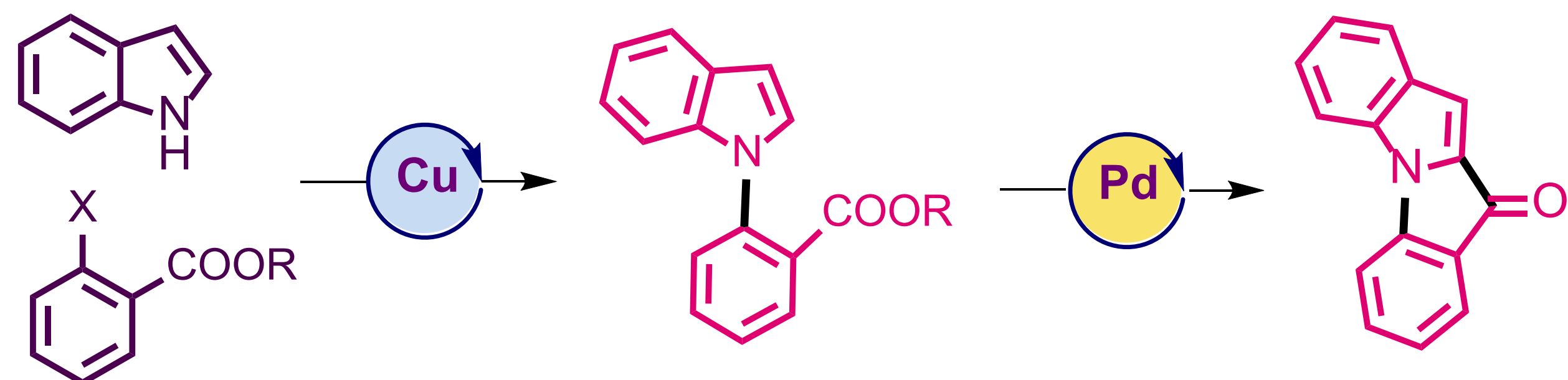
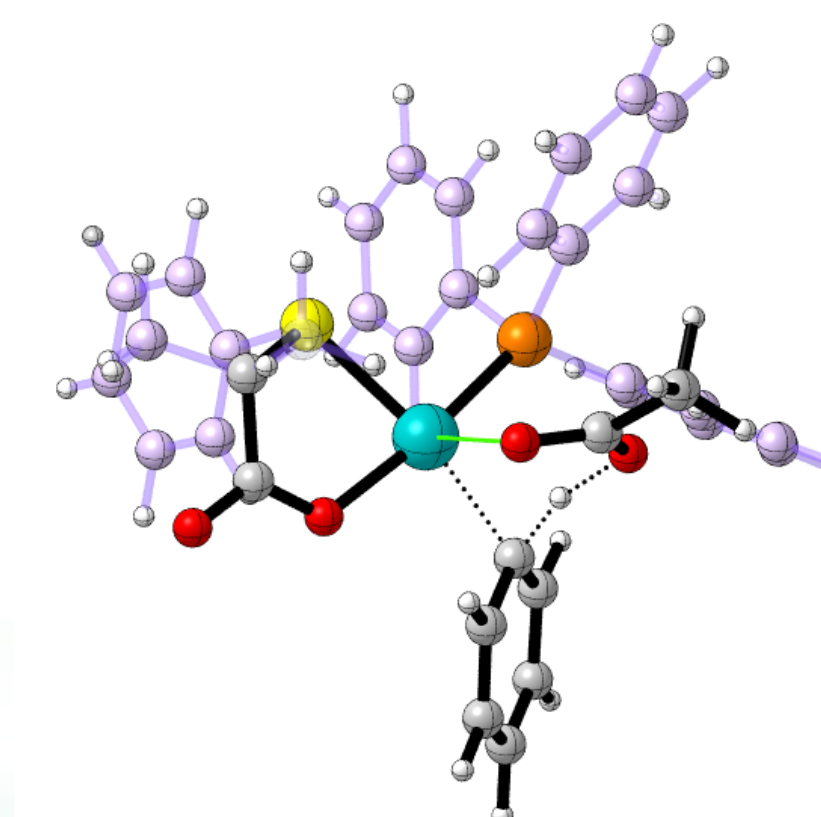
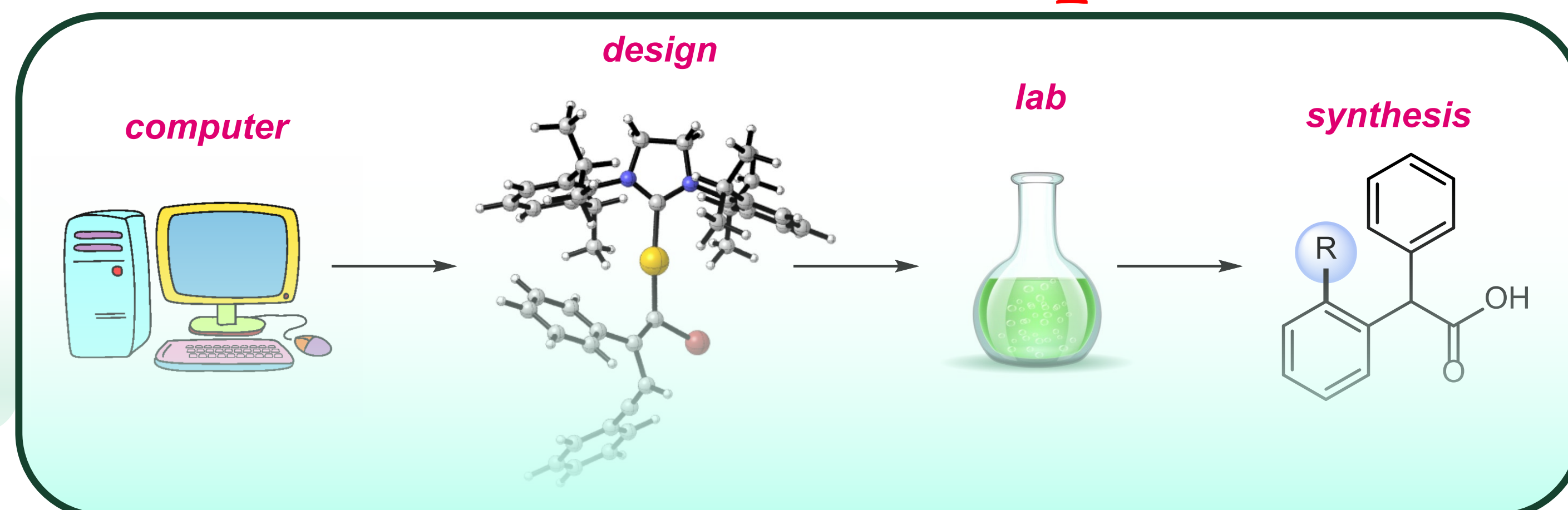
JM Aizpurua, M. Sagartzazu et al, *Eur J Med Chem*, 2021, 212, 113069

NEW REACTIVITY *in* ORGANIC MOLECULES

Lab and/or Computer



Enrique Gómez-Bengoa



Reaction Development
Synthesis of Molecules
DFT Studies
Mechanisms

