

Laboratoire d'innovation moléculaire et applications

LIMA | UMR 7042

Université de Strasbourg & CNRS & UNIVERSITÉ HAUTE-ALSACE

COHA

(Applied Organic Chemistry and Heterochemistry)



Dr Frédéric Leroux (DR)
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Dr Morgan Donnard (CR)

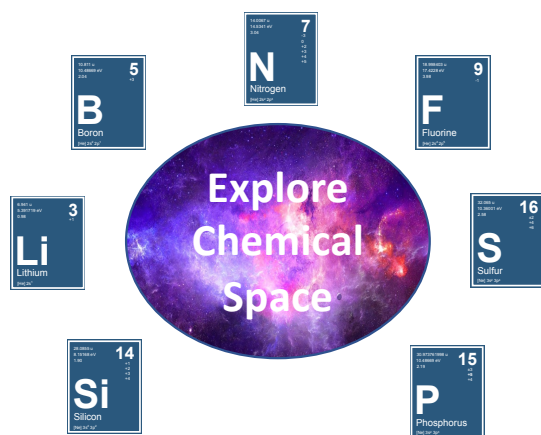


Dr Armen Panossian (CR)



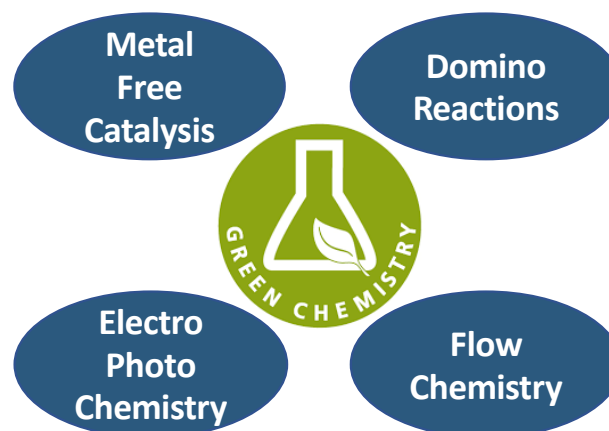
Methods in organic chemistry for the benefit of humans & plants

1 Heteroatom Chemistry



Chem. Eur. J. **2021**, in press
J. Org. Chem. **2021**, in press
Org. Lett. **2021**, 23, 8093
Eur. J. Org. Chem. **2021**, 5019

2 Sustainable Methods



Org. Chem. Front. **2021**, 8, 5289
J. Org. Chem. **2018**, 83, 7751
J. Org. Chem. **2017**, 82, 6629
Eur. J. Org. Chem. **2016**, 4545

3 Bioactive Targets

Medicinal Chemistry



Agrochemistry



Total Synthesis
Natural Products



ACS Omega **2021**, 6, 9723
J. Org. Chem. **2021**, 86, 3033
J. Med. Chem. **2020**, 63, 369
Chem. Eur. J. **2018**, 24, 1311

Strongly Application-Oriented

- Joint laboratory with Bayer
- 21 patents
- 2 processes industrially applied to ton scale
- 14 industrial PhD students (CIFRE) & postdocs



LCR



SANOFI

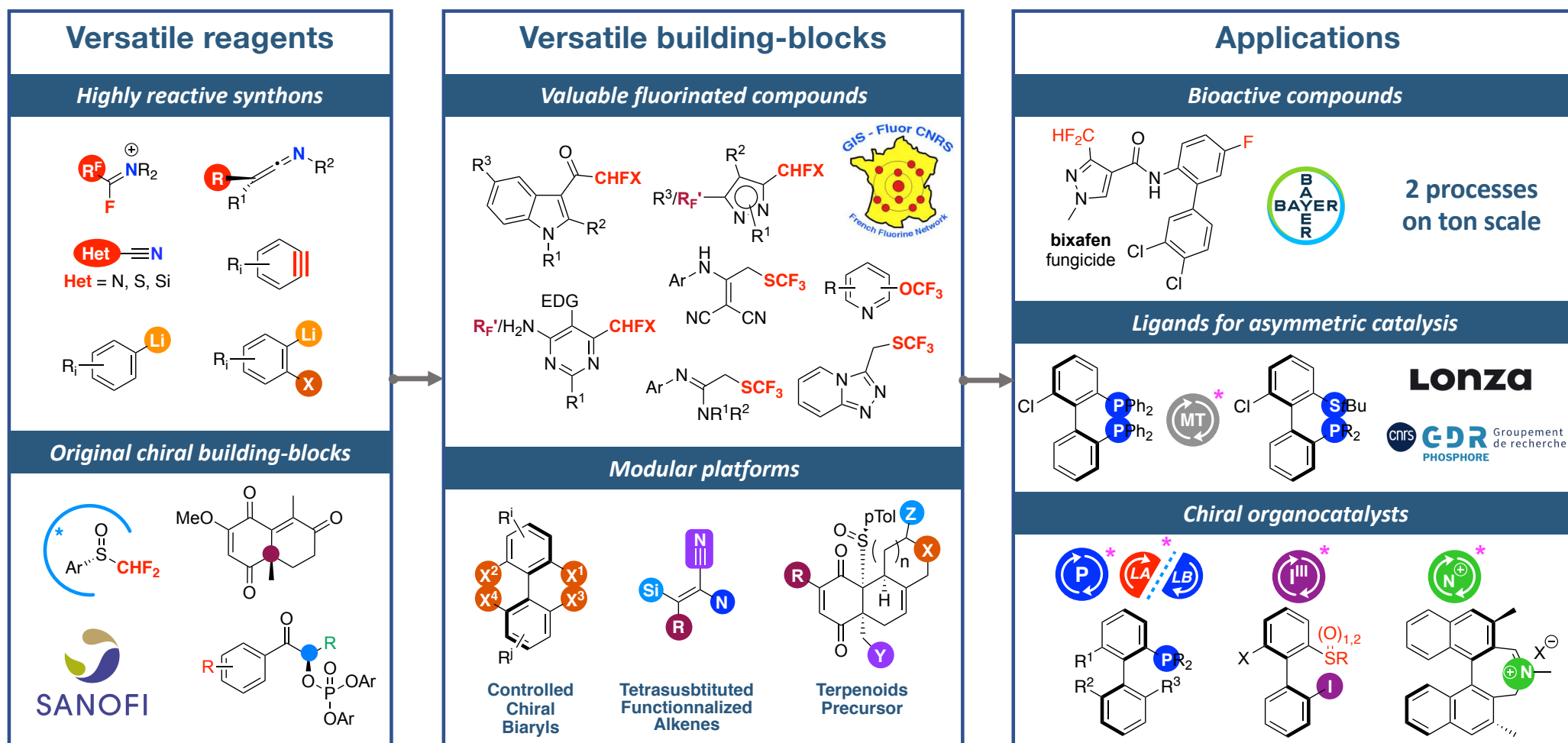


NovAliX

Lonza

MERCK

1 Heterochemistry – new reagents, new scaffolds, new applications



2

Sustainable chemistry – greener & safer processes



Abundant, low toxicity metal catalysts



Small Molecule Activation
Photocatalysis
Dual Catalysis
1,2-Difunctionalization
Alkene/Alkyne Activation

Domino – multicomponent reactions



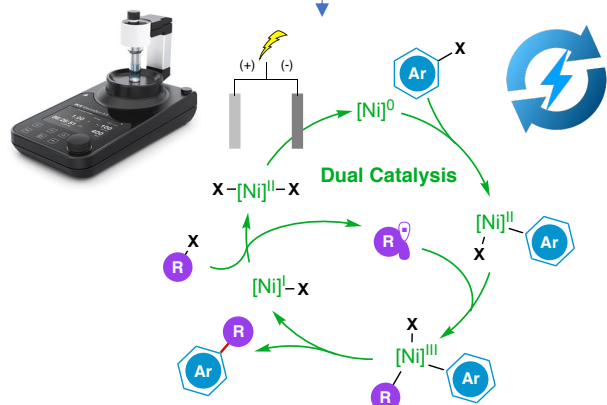
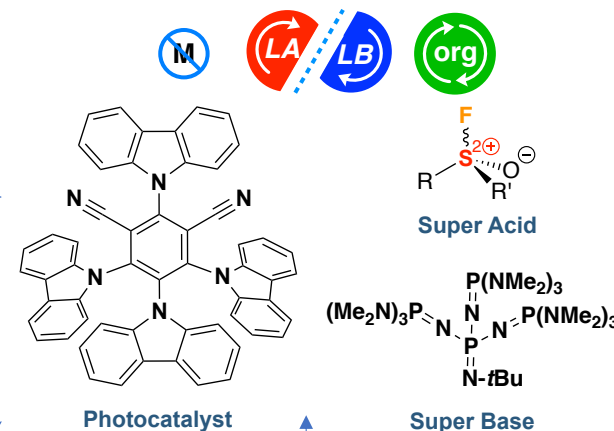
Efficiency



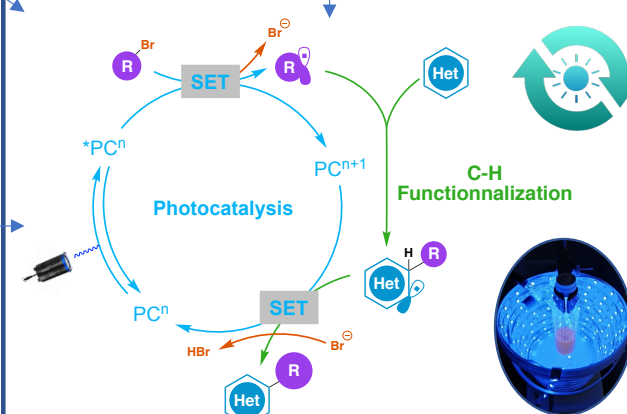
Complexity



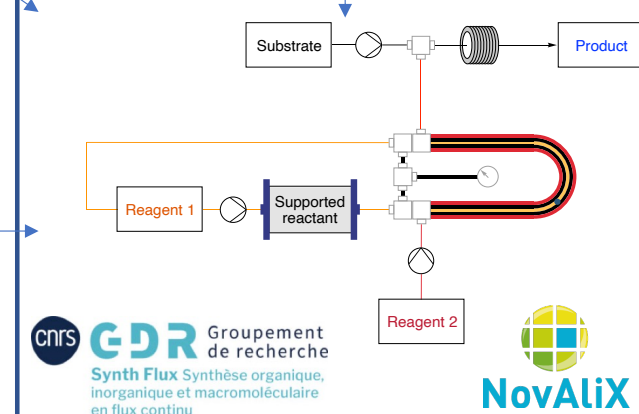
Metal free catalysis



Electrochemistry



Photochemistry

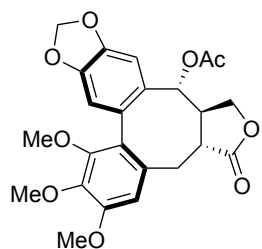


Flow Chemistry

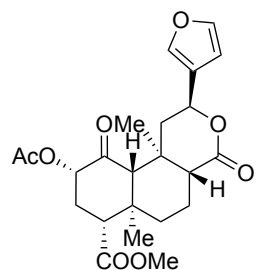
3

Bioactive targets – a realistic chemistry with applications

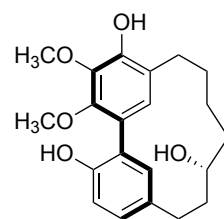
Total synthesis of natural products



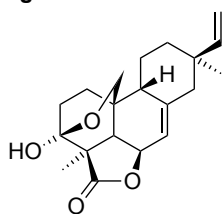
(-)-steganacin



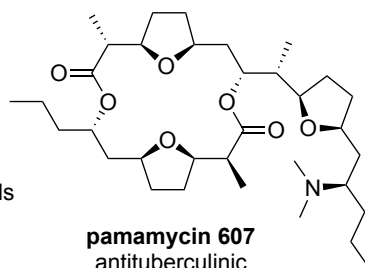
salvinorin A
psychoactive



(-)-(8S,11R)-myricanol
anti-inflammatory, anti-tumoral, anti-Alzheimer's,
...

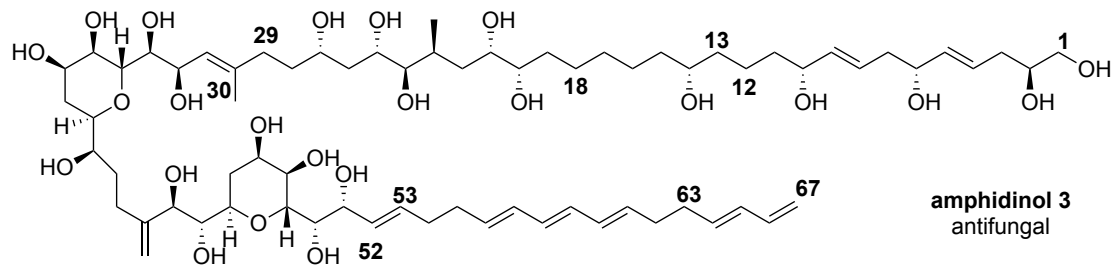


momilactone B
human leukemic T cells and cancer stem cells



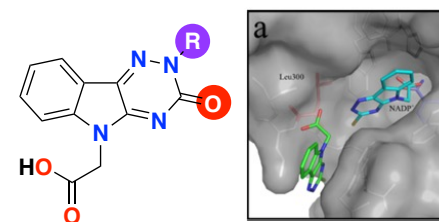
pamamycin 607
antituberculinic

CNRS GDR Groupement de recherche
SNMS2 Substances naturelles :
méthodes et stratégies de synthèse –
Les défis de demain

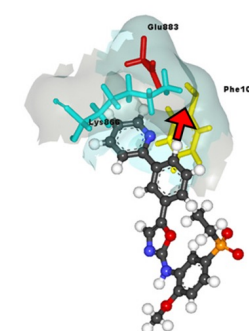


amphidinol 3
antifungal

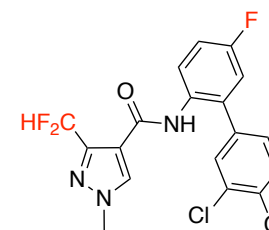
Medicinal & Agro chemistry



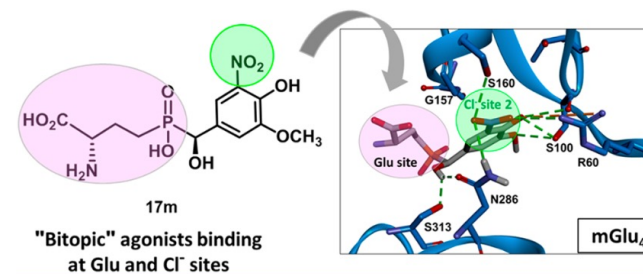
selective ALR2 inhibitor
pathological complications of diabetes



tyrosine kinase inhibition
VEGFR-2



bixafen
fongicide



"Bitopic" agonists binding
at Glu and Cl sites