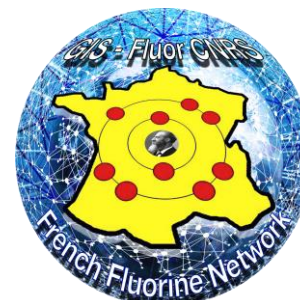




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BioCIS (UMR CNRS 8076)
Equipe Chimie Biologique



Keywords : Fluorinated amino compounds, amino acids, amino alcohols, peptides, chiral auxiliaries, enzyme inhibition, ^{19}F NMR probes



Thierry Brigaud



Grégory Chaume



Evelyne Chelain



Nathalie Lensen



Julien Pytkowicz



Pierre Milbeo

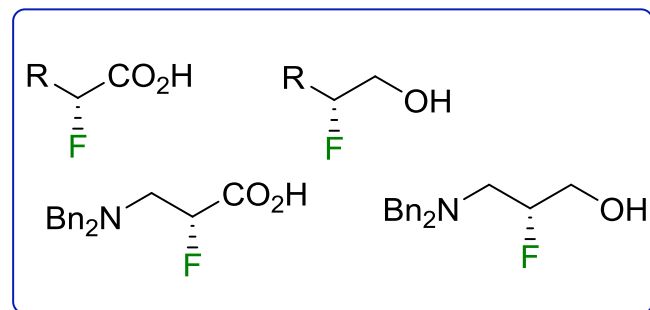
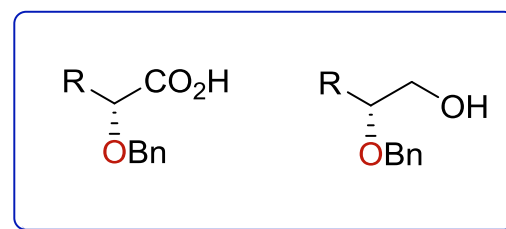
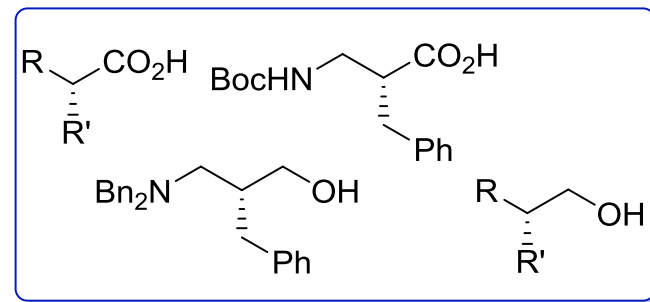
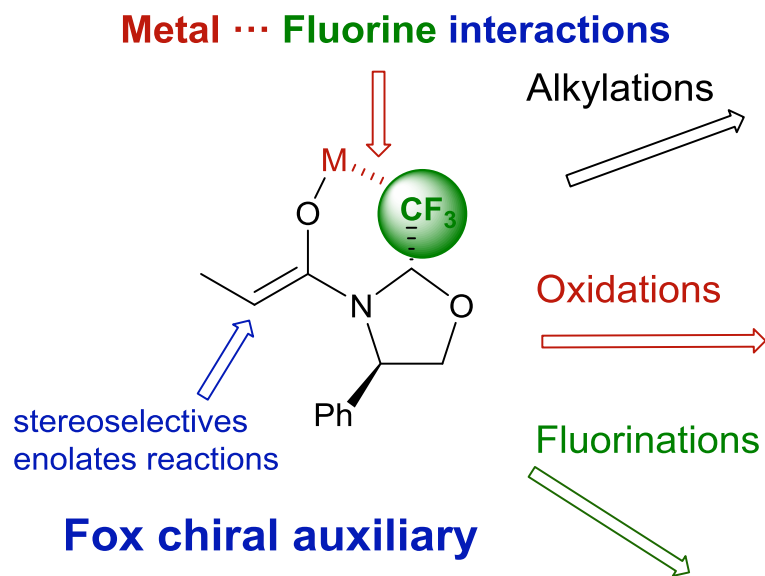


Chiara Zanato



Simon Gonzalez

Fluorinated Oxazolidines (Fox) as Chiral auxiliaries



**chiral modified amino acids
and amino alcohols (> 98%ee)**

Angew. Chem. Int. Ed. Engl. **2006**, 3677

Chem. Eur. J. **2008**, 3363

J. Org. Chem. **2008**, 73, 3970

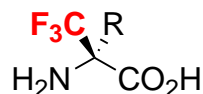
Org. Lett. **2010**, 12, 1496

J. Fluorine Chem. **2009**, 130, 1140

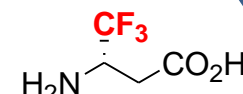
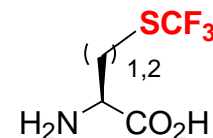
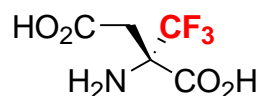
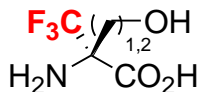
J. Fluorine Chem. **2012**, 134, 122

J. Org. Chem. **2013**, 78, 3487

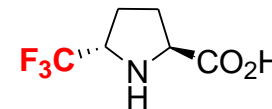
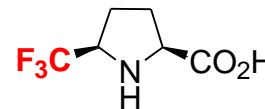
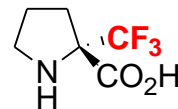
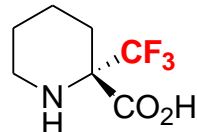
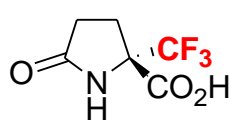
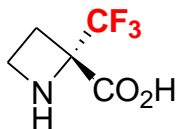
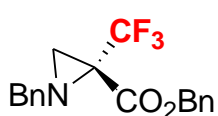
Fluorinated amino acids and amino alcohols as tools for peptide engineering



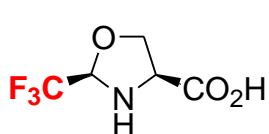
R= Me, Pr, Allyl, Alcynyl



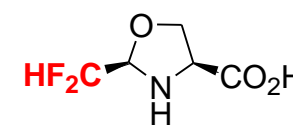
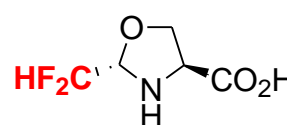
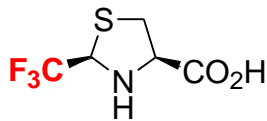
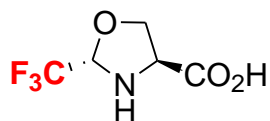
Acyclic α - and β -Tfm-amino acids



Prolines



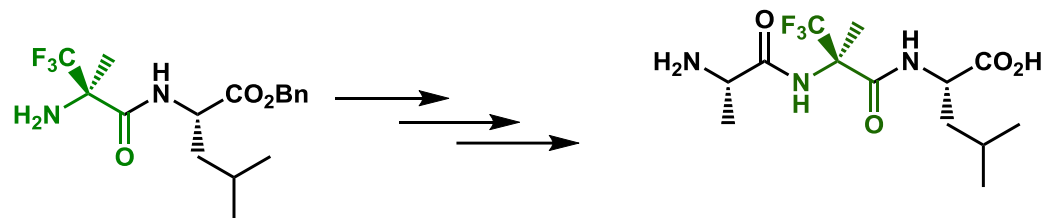
Pseudoprolines



Cyclic fluoro-amino acids

Org. Lett. **2021**, 23, 382; *Org. Biomol. Chem* **2021**, 19, 6771; *Org. Lett.* **2020**, 22, 2946; *Org. Lett.* **2009**, 11, 209; *Eur. J. Org. Chem.* **2009**, 5717; *J. Org. Chem.* **2010**, 75, 4135; *Tetrahedron: Asymmetry* **2011**, 22, 309; ; *Org. Lett.* **2015**, 17, 342; *J. Org. Chem.* **2015**, 80, 2700; *Eur. J. Org. Chem.* **2017**, 246; *J. Org. Chem.* **2006**, 71, 7075; *Chem. Commun.* **2019**, 55, 12487; *J. Org. Chem.* **2006**, 71, 2159.

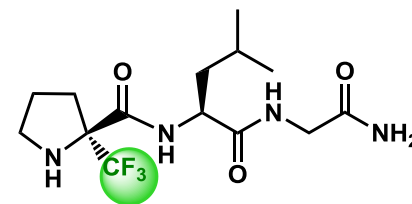
Fluorinated amino acids as tools for peptide engineering and medicinal chemistry



β -amyloid aggregation inhibition

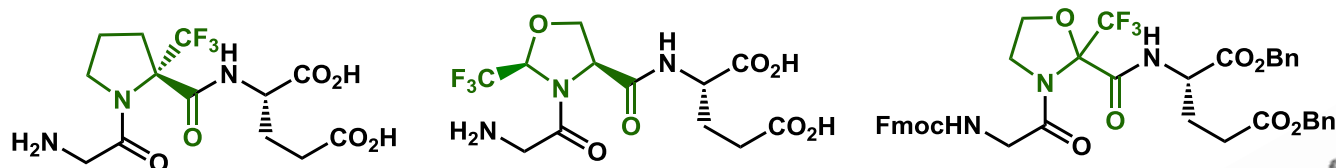
Eur. J. Org. Chem. **2009**, 5717

Biopolymers: Peptide Science **2015**, 104, 601



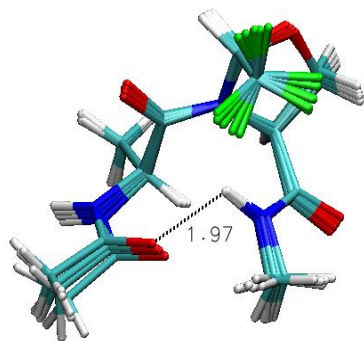
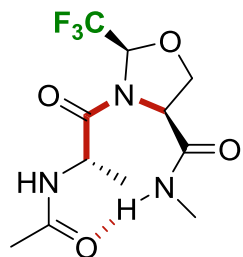
CF₃-MIF-1 analgesic

Eur. J. Med. Chem. **2013**, 62, 122;
Med. Chem. **2013**, 3, 206
RSC Adv. **2018**, 8, 14597



Neuroprotection *J. Org. Chem.* **2016**, 81, 5381-5392.

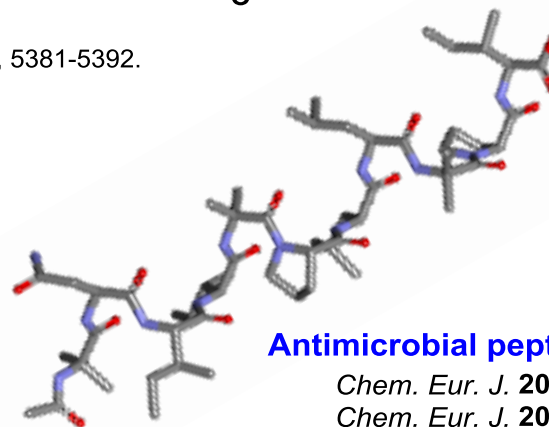
AGENCE NATIONALE DE LA RECHERCHE
ANR



NMR, DFT calculations,
Molecular dynamic

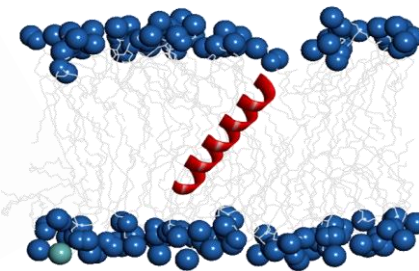
Type VI β -turn
cis-amide bond conformation

J. Org. Chem. **2010**, 75, 4135; *J. Org. Chem.* **2013**, 78, 10144;
J. Phys. Chem. B **2012**, 116, 4069; *New J. Chem.* **2013**, 37,
1336; *J. Org. Chem.* **2017**, 82, 13602.

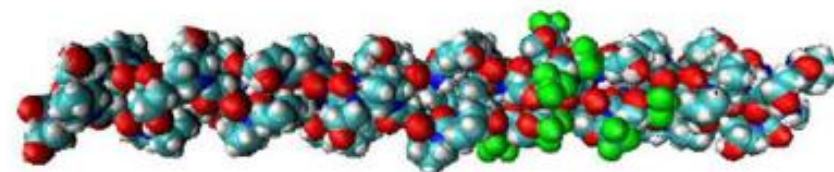


Antimicrobial peptides

Chem. Eur. J. **2018**, 24, 4328;
Chem. Eur. J. **2022**, 28, e202103887

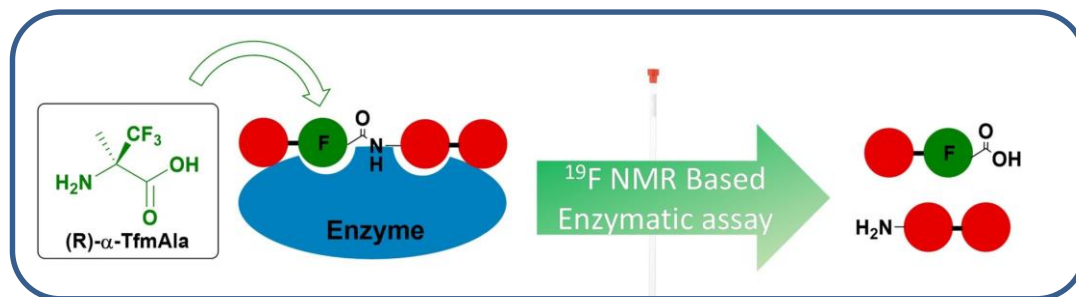


AGENCE NATIONALE DE LA RECHERCHE
ANR



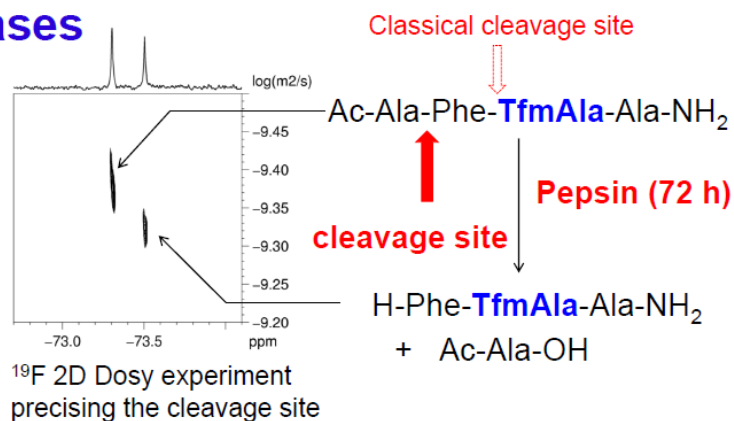
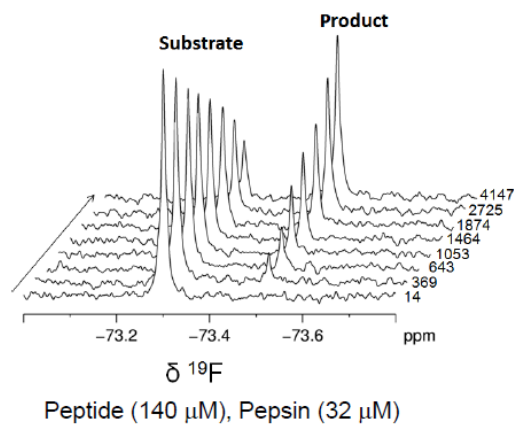
Fluorinated Collagen Mimetic Peptides

^{19}F NMR as a tool to probe protease degradation of peptides



Stability towards proteases

Hydrolysis of the tetrapeptide
Ac-Ala-Phe-(R)-TfmAla-Ala-NH₂



The hydrolysis of the fluorinated tetrapeptide is completely inhibited at the classical cleavage site