



RÉSEAU FRANÇAIS DU FLUOR



Superacid group

in G2S team « Glycochemistry, Superacid Systems chemistry »

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**Keywords : superacid, superelectrophiles, fluorinated nitrogen containing building blocks,
CH activation, bioactive (fluorinated) analogues of alkaloids**



New methods toward fluorinated nitrogen containing building blocks synthesis

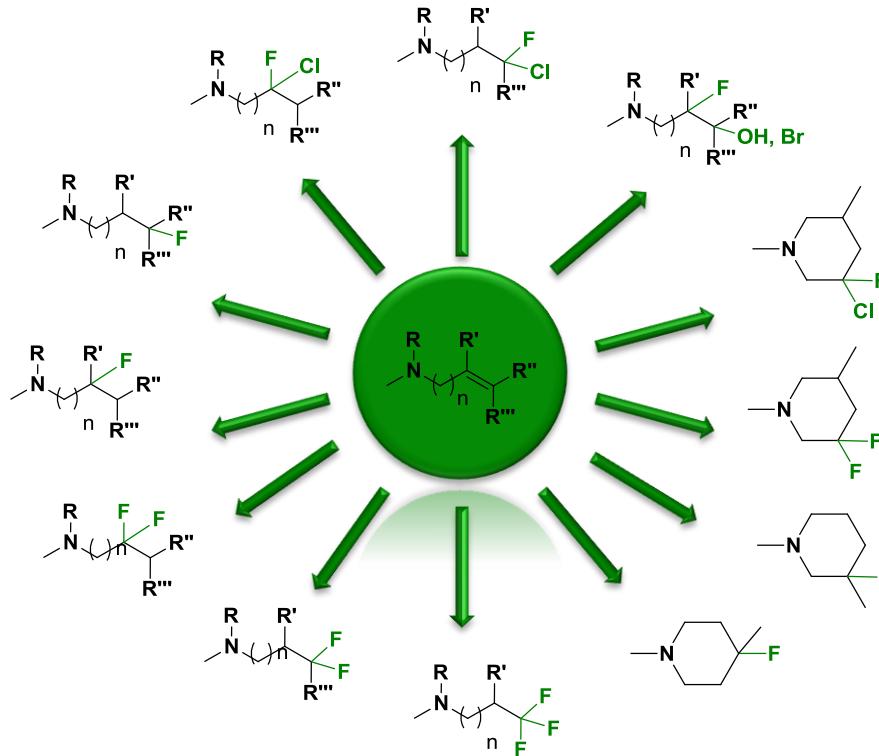
Method : After superelectrophilic activation in superacid, nitrogen containing unsaturated systems can be directly converted to a wide range of high valued fluorinated building blocks

Publications : Thibaudeau et al. *Chem. Commun.* **2007**, 3198-3200; *Chem. Commun.* **2008**, 12, 1473-1475; *Org. Biomol. Chem.* **2009**, 7, 4789 – 4797; *J. Org. Chem.* **2009**, 74, 6025–6034; *Org. Lett.* **2010**, 12, 868-871.; *J. Org. Chem.* **2011**, 76, 1460-1463; *Chem. Commun.* **2012**, 48, 5196-5198; *Chem. Commun.* **2012**, 48, 5877-5879.

Collaborations: D. O'Hagan (UK), G. Evano (Belgium)

Financial support : @rtMolecule society, ANR JCJC 2011 VINFLUSUP

Competitors : D. Klumpp (USA), G. K. S. Prakash et G. Olah (USA), T. Ohwada (Japan)



Functionalization of non activated CH bonds

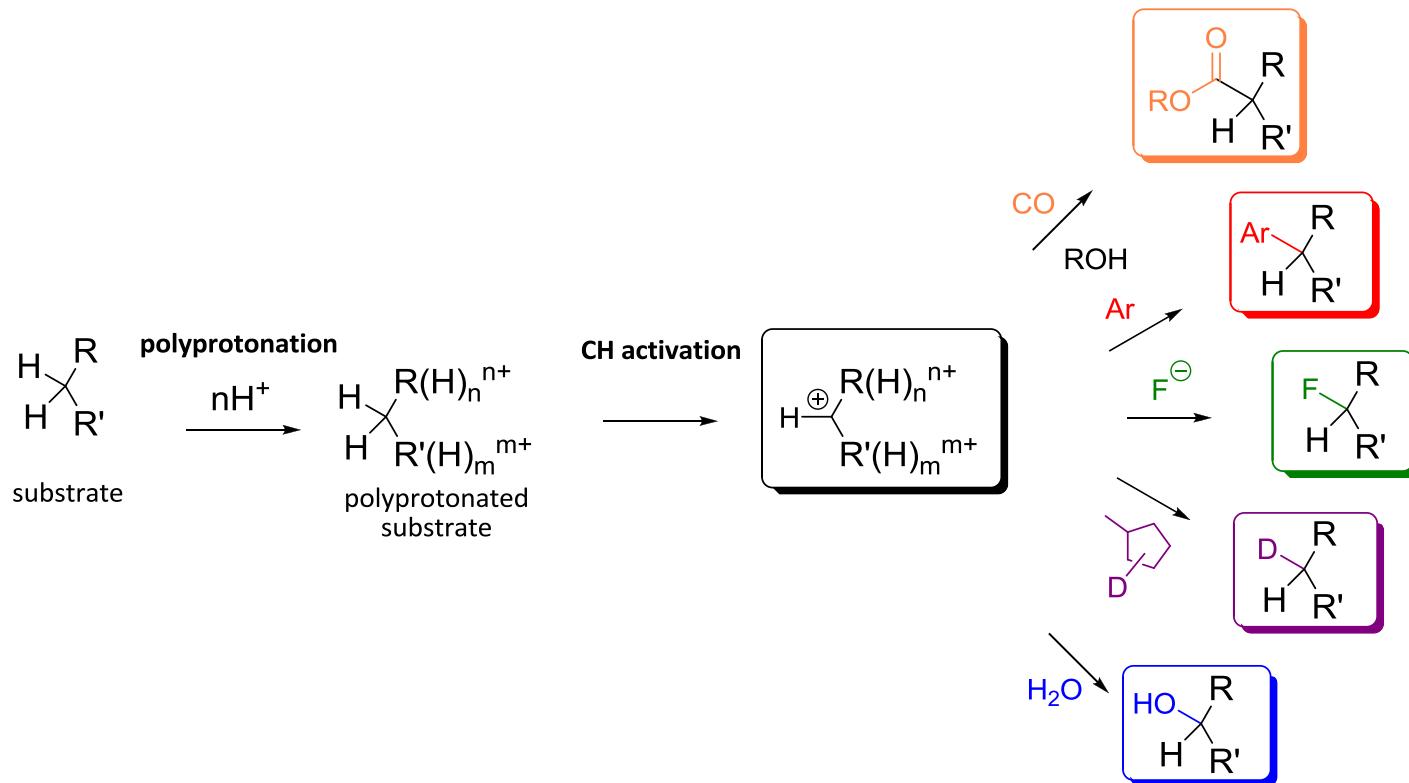
Method : By using superelectrophiles in superacid, unactivated CH bonds of substrates can be directly functionalized leading to a large variety of analogues in one step

Publications : Thibaudeau et al. *J. Fluorine. Chem.* **2012**, 134, 56-62 and references cited therein

Collaborations: J. Barbero (Spain), C. Bachman (France)

Financial support : ANR 2012 OXYCARB, Fondation pour le Développement de la Chimie des Substances Naturelles et ses Applications (Académie des Sciences)

Competitors : J. A. Ellman (USA), C. White (USA), M. P. Doyle (USA), ...



Direct synthesis of bioactive compounds

Method : superacid catalyzed modification of elaborated natural or synthetic molecules allowed the direct synthesis of bioactive analogues

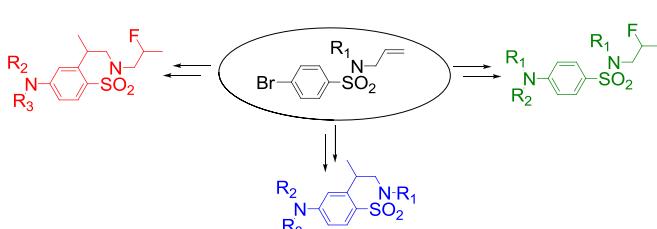
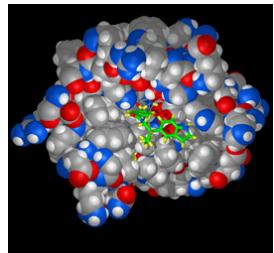
Publications : Thibaudeau et al. *Tetrahedron* **2005**, 61, 2065-2073; *J. Fluorine Chem.* **2007**, 128, 55-59; *Tetrahedron* **2010**, 66, 7112-7118; *Org. Lett.* **2011**, 13, 4116-4119; *Org. Biomol. Chem.* **2012**, 10, 2521-2524; *Bioorg. Med. Chem.* **2012**, *in press*; Coustard et al. *J. Nat. Prod.*, **2007**, 70, 2006-2009; *Journal of Ethnopharmacology*, **2011**, 133, 345–352.

Collaborations: C. T. Supuran (Italy), K. Vigier and F. Jérôme (France), C. Vandebroucke and J. Bescond (France)

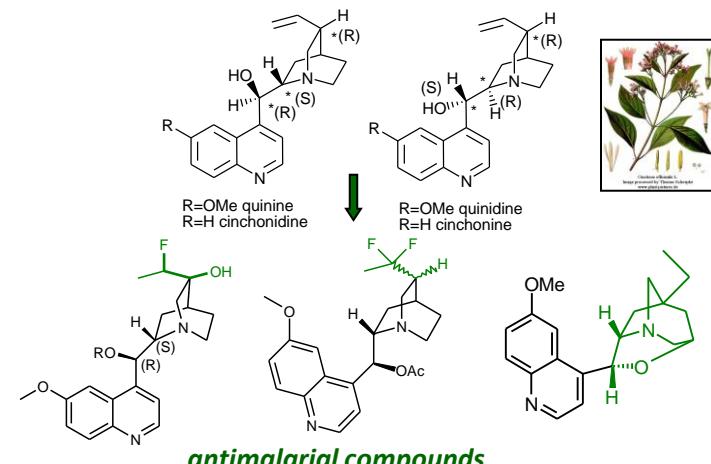
Financial support : @rtMolecule society, University of Poitiers (International Scientific Action)

Cinchona Alkaloids

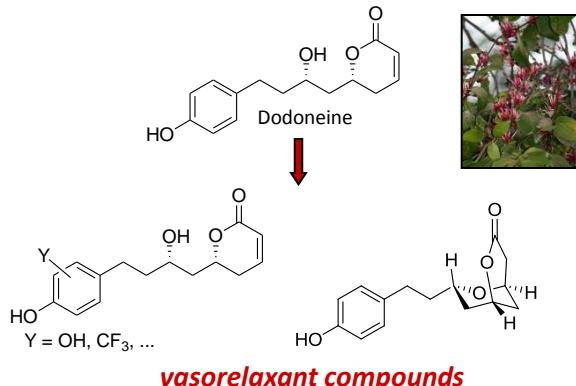
4-aminobenzensulfonamides



inhibitors of carbonic anhydrases

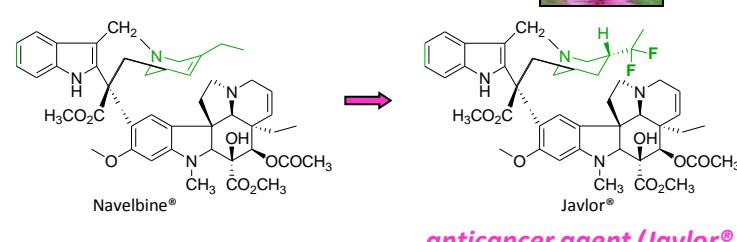


Tapinanthus dodoneifolius Alkaloids



vasorelaxant compounds

Vinca Alkaloids



anticancer agent (Javlor®)