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**Biography** Dr Sébastien Gouin is a CNRS research director in the laboratory CEISAM of the University of Nantes (France). He studied organic chemistry at the University of Nantes where he received his PhD in 2003. After postdoctoral training with Prof. Paul V. Murphy at University College Dublin (Ireland), he was appointed as a CNRS researcher in the University of Amiens. The present research activities of his group in Nantes are focused on the development of glycoconjugates interfering with carbohydrate-binding and processing proteins (lectins and glycosidases).

**Abstract title:** From the design of an antibacterial glycoconjugate to the development of a chemoselective bioconjugation method for tyrosine.

**Abstract =**

Our group is interested in developing antagonists of carbohydrate-binding proteins (lectins) to disrupt the attachment of pathogenic bacteria and fungi to host cells. We have developed monovalent glycoconjugates interfering with the FimH protein from *E. coli*, involved in the bacterial adhesion to the host cells. *In vitro* and *in vivo* results evidenced a potential interest of the compounds in the treatment of *E. coli*-mediated infections.

As FimH possess tyrosines (Y) at the entrance of the binding domain, this work also recently led us to develop a chemoselective bioconjugation method for Y. Selective Y anchors (phenyl-urazols), were activated electrochemically instead of using oxidizing chemicals. This first electrochemically promoted tyrosine-click (e-Y-CLICK) protocol allowed the soft Y-modification of peptides and proteins *in situ*, on demand, and in pure aqueous buffers.