

Name: Francesca Sardelli

Contacts:

Phone: 050 221 9692

e-mail: francesca.sardelli@phd.unipi.it

Supervisors: Mauro Pineschi, Simona Rapposelli

Ph.D. project Title: Development of new small molecules having GLP-1 secretagogue activity leveraging on new mechanism of action.

Research summary: This research project is focussed on the rational preparation of a library of new small molecules based on a 1,3-diaza-4-oxa-[3.3.1] bicyclic scaffold as

potential candidates for the treatment of diabesity (diabetes and obesity) and neurodegenerative diseases, such as Alzheimer's and Parkinson's diseases. In fact, these new compounds have shown GLP-1 (Glucagon-Like Peptide-1) secretagogue activity, both *in vitro* and *in vivo*. GLP-1 is an incretin hormone which leads to numerous metabolic effects, including glucose-dependent stimulation of insulin secretion. Moreover, a failure of GLP-1 receptors has shown evident damages in several neurological activities. Currently, many GLP-1 mimetic peptides are commercially available. Anyway, they present many problems in terms of stability and administration. Hence, the aim of this project is to obtain a new non-peptide and orally active drug for the treatment of diabetes and neurodegenerative disorders.