**PROJECT PROPOSITION - Lab1** (M1, second semester)

Supervisor(s): Albane le Maire

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Hosting lab: Team « Les récepteurs nucléaires, intégrateurs de signaux endogènes et environnementaux »

Period of proposed project (put **x** instead of ロ) :

X Only 1st slot ロ Only 2nd slot

ロ One slot, but I have no preference on which ロ Both slots (with different groups)

1st slot: thursdays and fridays, from 3/2/2021 to 18/3/2021

2nd slot: thursdays and fridays (except for the last 2 weeks), from 31/3/2021 to 6/5/2021

SEARCH FOR LIGANDS OF NHR-8, A PARASITIC NEMATODE NUCLEAR RECEPTOR, TO OVERCOME ANTI-INFECTIOUS DRUG RESISTANCE

Subject:

Resistance to ivermectin (IVM), the most used antiparasitic drug, is widespread in parasites and compromises successful control of human and animal parasites. The orphan nuclear receptor NHR-8 of nematodes has been identified as an important factor of IVM resistance in parasitic nematodes. Although it is at the crossroads of important metabolic pathways, very little is known about NHR-8. Our goal is to understand how NHR-8 mediates drug resistance in nematodes by dissecting its mechanism of action.

Technical tools to be used:

Structural modelling, X-ray crystallography, chemical engineering and ligand design.

Objectives:

- Determination of 3D structure and model building of NHR-8 from different parasitic nematode species by X-ray crystallography and computational methods

- Rational design of inhibitory molecules to sensitize nematodes to drugs