PhD Position Tours: **Co-vectorisation of nucleic acids and chemotherapy for triple negative breast cancer therapy potentiation**

Triple negative breast cancers (TNBC) represent the most aggressive breast cancer subtype, with a poor prognosis, mainly linked to the existence of drug-resistant clones with increased metastatic properties. Small interfering RNAs (siRNA) are a promising tool for inhibiting the synthesis of specific proteins and are increasingly used in research for new cancer treatments. The EA6295 NanoMedicines and NanoProbes team recently developed efficient nanovectors to deliver siRNA in TNBC cells. A combination of these siRNA nanovectors (NV-si) with non-vectorized chemotherapy (doxorubicin) makes it possible to potentiate the chemotherapy effects. This thesis project aims to (i) develop an injectable formulation for doxorubicin and siRNA co-vectorization, (ii) determine an effective treatment protocol *in vitro* on a TNBC model using one or more siRNA sequences targeting proteins involved in chemoresistance and (iii) validating the choice of the therapeutic regimen on an orthotopic TNBC mice model.

Profile and required skills: The candidate should have skills in nanomedicine, including knowledge of synthesis, formulation and characterization of nanovectors. In addition, the candidate will be required to evaluate the effectiveness of these nanovectors on cell models (and probably animal models) of triple negative breast cancer. Knowledge of cellular and molecular biology will also be appreciated. Pharmacist training will be a plus.

Application:
>   PhD supervisor : Stephanie DAVID (stephanie.david@univ-tours.fr)
>   Co-supervisor : Katel HERVE-AUBERT (katel.herve@univ-tours.fr)
>   Team : **EA6295 Nanomédicaments et Nanosondes**, Université de Tours
>   (https://nmns.univ-tours.fr)
>   PhD position from 01 october 2022 until 30 september 2025 (bourse region Centre-Val-de-Loire)

Additional information can be found on https://nmns.univ-tours.fr **and** https://collegedoctoral-cvl.fr
To apply, please send us a CV, a motivation letter and all transcripts from the baccalaureate.
Application deadline: 05/04/2022