



Internship proposition  
**One page max**  
M2 OHNU 2026-27



**Lab:** CIRCINA

**team:** Team 7b

**Name and position of the supervisor:** Camille TESSIER (Postdoc in December)

**Email of the supervisor:** camille.tessier1@etu.univ-nantes.fr

Candidate:

**Title of the internship:**

Characterization of small molecules inhibitors of ciliogenesis in breast cancer.

**Summary of the internship proposal:**

Primary ciliogenesis is the dynamic process of assembling the primary cilium, a non-motile solitary organelle found at the surface of many cell types. This microtubule-based structure acts as a cell signalling platform. Previous work from our team has shown that primary cilia promote the development of triple-negative breast cancer (TNBC), an aggressive subtype of breast carcinoma. Genetic inhibition of primary ciliogenesis in a TNBC mouse model was shown to prevent tumor formation. Pharmacological inhibitors that affect ciliogenesis have been identified, but these drugs have limited effects on cilia and can also impact other cellular processes.

We recently identified three potential candidate molecules that can specifically inhibit ciliogenesis. Although preliminary experiments have already been conducted, the experimental conditions used may not have been optimal. The aim of this project is to characterize the effects of these compounds using microscopy in both 2D and 3D breast cancer models, including cell lines and tumor organoids. The student will also establish cell lines expressing fluorescent ciliary markers to visualize, through live-cell microscopy, the effects of these small molecules on ciliogenesis dynamics.



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Option(s) linked to the project:

- Hematology                      Immunology-Cancerology
- Oncology                      Nuclear Medicine

Option(s) linked to the profile:

- Clinical Research Profile
- Experimental Biology Profile
- Data Analyst Profile