

## Post-doctoral researcher position at the laboratory CiTCoM (CNRS UMR 8038, faculty of pharmacy, Paris)

A post-doctoral researcher position is available in the team "*Medicinal Chemistry and Translational Research*" (ERL INSERM U 1268) of the laboratory CiTCoM (CNRS UMR 8038), located in the faculty of pharmacy, in Paris (France). One of the main focuses of the team is devoted to the control of signaling mechanisms associated with breast cancer.

### Background

Among the different types of mammary tumors, triple negative breast cancer (TNBC), which corresponds to about 15% of breast cancers, concerns often women of reproductive age and is particularly aggressive. It metastasizes easily and shows high risk of recurrence. Due to the absence of estrogen and progesterone receptors and to the absence of overexpression of Her2, the use of hormone therapy is excluded. Conventional chemotherapy including taxanes is, therefore, preferred. Apart pain resulting from tumor growth and related metastasis, notably in bones, chemotherapy induces peripheral neuropathy. Identifying a protein involved in both the inhibition of tumor growth and cancer-related pain, would bring significant benefits to patients. One promising target is the protein GPER (for *G protein-coupled estrogen receptor*), a type A GPCR interacting with estradiol and activating non-genomic mechanisms.

### Project

We have synthesized peptidic and non-peptidic GPER modulators inducing *in vitro* and *in vivo* apoptotic / antiproliferative and anti-tumoral / anti-nociceptive actions, respectively. The postdoctoral researcher will tackle different aspects of this project by: a) improving through pharmacomodulation the pharmacodynamic, pharmacokinetic and bioavailability parameters of the compounds of interest and b) developing new series of peptidic and heterocyclic GPER modulators. The researcher will also perform modeling studies. All pharmacological aspects will be explored through collaborations, particularly with the laboratory Neuro-Dol (UMR 1107) from the University of Clermont Auvergne (Clermont-Ferrand, France) and the team of Prof. M. Maggiolini, from the University of Calabria (Italy).

### Mission

We are looking for a highly motivated and interactive candidate with strong expertise in organic and peptide chemistry, and spectroscopy. Good team spirit will be appreciated. The candidate must be autonomous for the preparation of publications, oral communications and posters.

### Post-doctoral conditions

This post-doctoral position, which is supported by La Ligue Nationale Contre le Cancer, is limited to one year. Starting date : January 2025.

### Application process

Submit your CV, a motivation letter (in english or in french), a list of publications and two or three references to Prof. Yves Jacquot (yves.jacquot@u-paris.fr).

### References

1. Lappano et al. The peptide ER $\alpha$ 17p is a GPER inverse agonist that exerts antiproliferative effects in breast cancer cells. *Cells* **2019**, *8*, pii: E590.
2. Grande et al. Computational approaches for the discovery of GPER targeting compounds. *Front. Endocrinol.* **2020**, *11*, 517.
3. Mallet et al. The antitumor peptide ER $\alpha$ 17p exerts anti-hyperalgesic and anti-inflammatory actions through GPER in mice. *Front. Endocrinol.* **2021**, *12*, 578250.
4. Jouffre et al. Identification of a human estrogen receptor  $\alpha$  tetrapeptidic fragment with dual antiproliferative and anti-nociceptive action. *Sci. Rep.* **2023**, *13*, 1326.