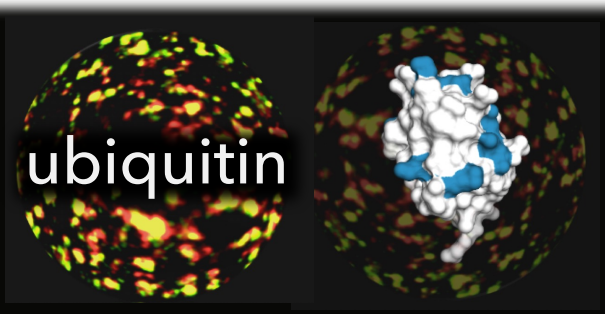
Universität Zürich[UZH]

IMCR INSTITUTE OF MOLECULAR CANCER RESEARCH

Penengo Lab

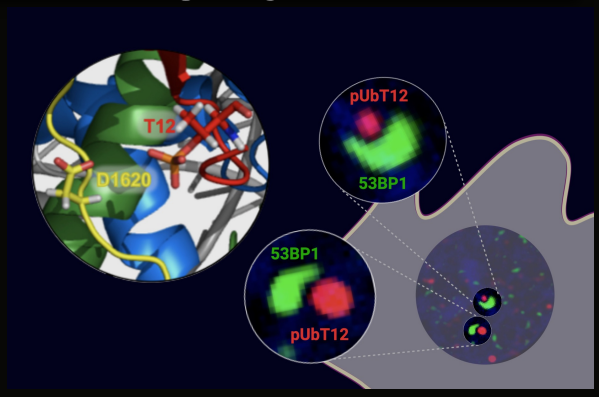
www.imcr.uzh.ch/research/Penengo.html
Starting date: negotiable



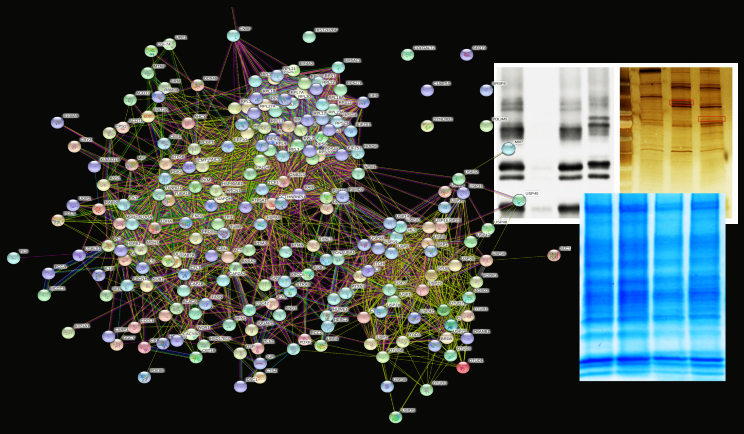
Project 2: Ubiquitin phosphorylation as new signaling system

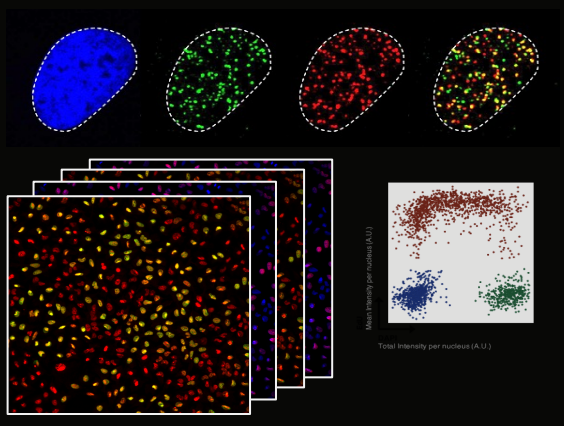
<u>Background:</u> Maintaining genome stability is crucial for all living cells and organisms. The repair of the highly cytotoxic DNA double-strand breaks is based on a variety of factors that modify chromatin structure, such as kinases and ubiquitin ligases. We recently found that a key event is the phosphorylation of ubiquitin, **phosphoUb**, quite a new concept in the ubiquitin field.

<u>Goal:</u> Investigating the dynamics of phosphoUb modification on chromatin, by identifying the players involved in this **novel phosphoUb-based signalling system**.



References
Walser et at Mol Cell 2020. doi: 10.1016/j.molcel.2020.09.017
Mattiroli and Penengo, Trends Genet 2021. doi: 10.1016/j.tig.2020.12.005





<u>Techniques:</u> We use various techniques: biochemistry, molecular and cellular biology, proteomics, gene editing techniques based on CRISPR/Cas9 technology, FACS analysis, DNA repair reporter assays, single DNA molecule assays to measure DNA replication, immunofluorescence and quantitative imaging.

<u>Context:</u> The Lab is located at the Institute of Molecular Cancer Research (IMCR), a worldwide renowned centre dedicated to genome stability. The student will be exposed to a vibrant atmosphere and an international scientific environment and will participate to scientific discussions during meetings and journal clubs.

<u>Candidate:</u> We are looking for highly-dedicated students with good communication skills and propensity for teamwork, genuinely interested in understanding the mechanisms of cancer development.

Interested in the position? Please send an email to: **penengo@imcr.uzh.ch**