



## Degree project for Exam thesis at Olink Bioscience

Olink Bioscience is developing *in situ* detection assays based on a novel Proximity Hybridization Chain Reaction (ProxHCR) method [Koos B. et al. *Nat Commun.* 2015 Jun 12;6:7294]. ProxHCR is an *in situ* staining method enabling detection of proteins, protein-protein interactions (PPIs) or post translational modifications (PTMs) with very high precision and a user-friendly protocol.

### **Degree project**

The Aim of this degree project is to develop an automated staining protocol for PPIs or PTMs based on ProxHCR.

Automated staining systems are widely used for routine clinical diagnostics. Our intention is therefore to identify and develop suitable assays and applications based on ProxHCR to be performed in such systems. Similar methods, such as for example *in situ* PLA (Duolink®), have some drawbacks making them unfit for automated staining. The ProxHCR method does not have these disadvantages while at the same time sharing the potential for highly specific assays for proteins and for PPIs and PTMs.

The focus of the exam thesis is to further develop ProxHCR and adapt this for automated systems. The primary goal is to study clinically interesting biomarkers on relevant material, and to perform a proof of concept (POC) study demonstrating the feasibility of ProxHCR. The protocol will be benchmarked to other automated systems for protein staining. In addition, a survey will be done with the aim to map potential protein biomarkers suitable for clinical diagnostics.

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