Master's Thesis project (20 weeks)

Project description
The aim of the project is to continue the development of the *in situ* version of the proximity ligation assay (*in situ* PLA) for detecting protein interactions. Specifically, we have a couple of membrane bound proteins involved in cancer that we want to study. In this project, we want to combine the advantages of the *in situ* PLA with the speed of flow cytometry analyses.

The project will involve cell culturing and handling, flow cytometry (FACS), immunohistochemistry, fluorescence microscopy (possibly also confocal microscopy), and our own published method for visualizing protein interactions/post translational modifications of proteins *in situ* (the proximity ligation assay) [1, 2].

The project will be performed in the Ulf Landegren group, which is a very open and creative group of people working with developing new molecular tools and methods.

Experience with the techniques used in the project (especially experience with cell culturing) is an advantage, but not required.

Contact
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1. Soderberg, O., M. Gullberg, M. Jarvius, K. Ridderstrale, K.J. Leuchowius, J. Jarvius, K. Wester, P. Hydbring, F. Bahram, L.G. Larsson, and U. Landegren, *Direct observation of individual endogenous protein complexes in situ by proximity ligation.* Nat Methods, 2006. **3**(12): p. 995-1000.
2. Jarvius, M., J. Paulsson, I. Weibrecht, K.J. Leuchowius, A.C. Andersson, C. Wahlby, M. Gullberg, J. Botling, T. Sjoblom, B. Markova, A. Ostman, U. Landegren, and O. Soderberg, *In situ detection of phosphorylated PDGF receptor beta using a generalized proximity ligation method.* Mol Cell Proteomics, 2007.