

ICB PhD public presentations

DETECTION AND PREDICTION OF PROTEIN AGGREGATION FOR BIOPHARMACEUTICAL APPLICATIONS

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Project Summary: Proteins represent powerful therapeutic tools in the pharmaceutical field thanks to their ability to bind their target with high selectivity and specificity, while displaying reduced side effects. However, their complex 3-dimensional architecture can lead to a variety of chemical and physical degradation routes, including aggregation, which is a major concern for the production of safe and active biopharmaceutics. Proteins are also key players in ongoing pathological processes, where their presence in a modified form may report for ongoing aberrant microscopic processes, making them ideal biomarkers for diagnostic applications. Both applications require methods to predict and characterize protein behavior in complex solutions, which represents a major challenge. Here, we propose new methods for the detection, evaluation and inhibition of protein aggregation in the context of biotherapeutic development and biomarker detection, with key implications for the biopharmaceutical industry.

CV: Marie obtained her B.Sc. in Chemistry and Chemical Engineering from EPFL and her M.Sc. in Chemical and Bioengineering from ETH Zurich. In 2016, she started her doctoral studies in the Biochemical Engineering Laboratory.

