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Supervisor's opinion – Bachelor Thesis Anna Drechslerová

Analyzing a huge dataset of several thousand aquaporin (AQP) sequences in the course of a project aiming to engineer optimized AQP variants for the use in separation membranes we found differences in the amino acid distributions at the AQP protomer interfaces oriented towards the lipid bilayer and the neighboring protomers. In addition, the amino acids distributions of residues oriented from these interfaces towards the protein interior were different depending on the type of interface. The first observation is important in understanding the causes and single contributions of transmembrane protein oligomerization the latter observation indicates an overall amino acid composition which needs to be fulfilled for α -helix formation. To see if these observations are universal for oligomer forming membrane proteins where the functional units' residues within each of the protomers or specific for AQPs we aimed at extending our dataset with other membrane proteins in Anna's Bachelor Thesis. Furthermore, she should analyze the different interfacial amino acid distributions and compare them to our AQP dataset.

To perform her thesis, Anna was provided with the protein annotation of 13 transmembrane proteins and the AQP data set together with the therefor established bioinformatic pipeline. As the AQP dataset and the pipeline were established by Natasha Trajkovska in my lab she served as direct contact besides me. I found Anna very motivated, focused, open minded in her approaches to problems, quick to grasp the essentials, and intelligent and resourceful in her solutions with a positive and peaceful personality.

Therefore, I would without any reservation recommend Annas work for the defense of bachelor thesis. If you have any further questions, please do not hesitate to contact me.

Sincerely,


Andreas Horner

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