PEGS EUROPE

Protein & Antibody Engineering Summit

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SPEAKER Q&A

Cambridge Healthtech Institute recently spoke with Dr. Christoph Brandenbusch of TU Dortmund University about his upcoming presentation "Continuous Aqueous Two-Phase Extraction of Proteins – Novel Process Windows by Increasing Protein Solubility" taking place at the Protein Purification Technologies conference to be held 3-4 November 2016, as part of the 8th Annual PEGS Europe event in Lisbon, Portugal.

Dr. Christoph Brandenbusch studied Chemical Engineering at the Department of Biochemical and Chemical Engineering at TU Dortmund, (Germany) 2003-2007. He finished his Ph.D. thesis entitled "Downstream processing in biphasic biocatalysis by means of scCO2" under the supervision of Prof. G. Sadowski at the Laboratory of Thermodynamics, Department of Biochemical and Chemical Engineering, TU Dortmund in 2011. Since 2012, he has worked as a group leader for bioprocess separations at the Laboratory of Thermodynamics, Department of Biochemical and Chemical Engineering, TU Dortmund (Germany). His main research fields include novel strategies for protein purification (e.g., precipitation, aqueous two-phase extraction) as well as hybrid-modeling approaches.

Q: How do hybrid modeling approaches aid in improving processes?

Hybrid modeling approaches are an innovative alternative for estimating process windows in cases where traditional (modeling) approaches fail (e.g. therapeutic proteins). By combining an advanced analytical technique (for therapeutic proteins) with a detailed model (influence of excipients, process environment), reliable estimations for process conditions can be made based on minimal experimental data.

Q: How do you achieve selective purification?

Selective purification / partitioning of the target protein is achieved by choosing appropriate excipients / displacement agents based on intermolecular interactions of the proteins and protein-excipient mixtures. This allows for a thermodynamics /mechanistic based design of ATPE processes

Q: What technologies do you use to increase protein solubility?

In order to increase protein solubility in ATPE, different excipient mixtures are used that enable both a selective purification and stabilization of the protein in solution. Choice of excipients is again based on molecular interactions induced by the individual excipient as well as synergies of excipient mixtures.

Q: What are you most looking forward to at PEGS Europe?

Discussing recent advances in ATPE with the audience and presenting an alternative to state-of-the-art heuristic process development.

To learn more about his presentation and the PEGS Europe Summit, visit **PEGSSummitEurope.com/Protein-Purification-Technologies**