

The Austrian Center of Industrial Biotechnology collaborates with GE Healthcare

07 February 2017 | News | By BioSpectrum Bureau

The Austrian Center of Industrial Biotechnology collaborates with GE Healthcare



Singapore: The Austrian Center of Industrial Biotechnology (acib) has joined hands with GE Healthcare introducing a cell line engineering research collaboration to bring increased productivity to bio manufacturers. The goal of the three-year partnership is to explore and identify new tools and methods to modify and optimize the Chinese hamster ovary (CHO) cell line performance. Cell lines are the most important single component in the production of bio pharmaceuticals, as they set the boundaries for the product yield and quality resulting from a bio manufacturing run.

CHO cell lines, the most commonly used hosts for industrial production of therapeutic proteins, have not traditionally received much direct attention or optimization in the industry, because the technical means have been limited, and the regulatory environment is demanding. Currently, bio pharmaceutical companies are mainly using time-consuming empirical, trial and error methods to find the most optimal production cell clone for their product starting from sub-optimal starter cell lines. However, with the newly available opportunities introduced by gene editing and analytical tools, it has become possible to explore how cells behave and respond to different process conditions, and develop improved starter cell lines accordingly.

"With the new analytical tools that genome sequence information along with different-omics technologies (such as transcriptomics) provide, we begin to understand precisely how cellular performance is regulated and how it works in detail. What we are aiming for in this collaboration is to develop the ability to manipulate cell behavior in an efficient way, such that we can design, define and control these properties and adapt them to whatever is best suited for a given product", said Prof. Nicole Borth of BOKU University, Area Leader at acib and in charge of the project.

GE Healthcare and acib will seek to reduce the need for clone screening, recognize suitable tools for cell line engineering, and gain more knowledge about what cellular mechanisms determine cell line efficiency. In the first phase, the collaboration focuses on performing basic research in this area, but in the long-term the work could lead to creation of a pre-engineered host cell line library, where biopharma producers could choose the most suitable cell line to use in the production of any

specific bio pharmaceutical to ensure higher productivity with increased speed and final product quality.

"While the biopharma industry is growing quickly, lack of access to biologic drugs is commonplace in many countries partly due to the complex and time-consuming production methods. Cell line engineering could help us bring major productivity improvements for our customers, making it more feasible to bring biologic manufacturing to more regions. Acib has already conducted some remarkable research in this field, and we believe that this collaboration will increase our understanding of cellular behavior, eventually creating more predictable and reliable manufacturing processes for our customers, biopharma producers", said Morgan Norris, General Manager, Upstream and Cell Culture, GE Healthcare Life Sciences.