



## **BIOTEM enters into collaboration with CALIXAR for the development of therapeutic antibodies against membrane targets**

Apprieu, May 20, 2019 – BIOTEM, a key player in the development of monoclonal antibodies of excellence, is pleased to announce the launch of a collaboration with CALIXAR, an innovative company specialized in the isolation and production of **native and functional membrane proteins (MP)**.

Together, the two companies continue their commitment to develop future immunotherapies. Combining complementary skills and know-how, the BIOTEM-CALIXAR partnership aims to provide new therapeutic antibodies against challenging antigens of high medical relevance. This specific approach will increase chances to succeed in clinical stages.

CALIXAR will use its patented technology and know-how to solubilize, stabilize as well as structurally and functionally characterize challenging membrane protein antigens involved in unmet medical needs. CALIXAR antigens will be used to generate **functional antibodies**.

Using its patented technological platform CALIXAR preserves the original structure of membrane proteins (such as GPCRs, Ion channels, Transporters, Viral targets, enzymes, etc.), allowing the preservation of native like state of MP to enable antibody discovery using immunization as well as display methodologies. This technological platform helps CALIXAR to build its unique pipeline of targets and to become a full Drug Discovery company.

BIOTEM will implement its proprietary **Ultimate Humanization®** technology in order to generate promising therapeutic antibody candidates against difficult MP targets

The Ultimate Humanization® is a cutting edge technology based on the selection of natural antibodies from **non-Human primates (NHP) immune libraries** by Phage Display.

Thanks to the active immunization of NHP the technology allows to recover candidates with (i) a **very high affinity** for their target, (ii) a **low risk of toxicity** by off-target cross-reactivity and (iii) a **high identity with human germinal sequences**. This last feature allows implementing rapid & cost effective humanization strategies with final candidates exhibiting outstanding **Germinality Index** (typically from 95% to 100%). The platform also integrates state-of-the-art sequence optimization methods for fine-tuning of the physicochemical

properties of candidates in order to improve, among other things, their druggability and manufacturability.

### **About BIOTEM**

Expert in immunotechnology since 1980, BIOTEM is a Contract Research Organization which provides high added value services for the development of custom monoclonal antibodies and immunoassays (ELISA & LFIA). Complying with ISO 9001:2015 / ISO 13485:2016 Quality Standards, the company has been the privileged partner of more than 400 prestigious industrial and academic laboratories for their projects in fundamental research, development of improved diagnostics or generation of promising therapeutic tools.

Based on a high level of expertise and exclusive technologies, BIOTEM implements the most relevant strategies for each project according to the client's specifications. As a benefit, BIOTEM is keen to propose contracts with guaranteed results.

From the generation of original monoclonal antibodies – by Hybridoma and Phage Display technologies – through their production, characterization (affinity & specificity determination, sequencing, stability studies, etc.) and immunoassay developments, BIOTEM offers a wide range of customized services.

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### **About CALIXAR**

Calixar discovers and develops new approaches to isolate full-length membrane therapeutic targets with the highest purity levels. The company develops its own pipeline of medically-relevant targets and can also utilize its patented technology platform for other companies that need to identify, express, extract and purify membrane proteins (GPCRs, ion channels, receptors, transporters and viral targets). Calixar's approach provides pharmaceutical companies with the opportunity to work with high-quality and reliable targets or antigens, compatible with all applications. This includes developing antibodies and/or discovering primary leads through Structure-Based Drug Design (X-ray and cryo-EM) or High-Throughput Screening assays. The CALIXAR® platform also enables new vaccine formulations.

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