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Acolyte to Provide Life Sciences Applications for Adenylate Kinase

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July 6th 2005 - Acolyte Biomedica has successfully developed its first life sciences research assay based on Adenylate Kinase (AK) technology. BacLite® RapiTECT GN™ is designed for the rapid and highly sensitive enumeration of gram-negative bacterial cells. Performance data compares extremely favourably with current methods of enumeration, including ATP bioluminescence.

The speed of time to result is determined by assay design, however, typical enumeration results can be achieved in minutes, and growth based results within a few hours.

Identified uses of the assay include:

The rapid enumeration of bacteria in a sample for direct quantification and spiking purposes
Determining growth (or inhibition of growth) of bacteria in antimicrobials
Evaluating the burden of genetic manipulation on organism viability
Optimising conditions for bacterial growth
Determining growth (or inhibition of growth) in selective culture media
Optimisation of growth conditions for cellular metabolite production

The BacLite® RapiTECT GN™ uses AK as a highly sensitive marker to detect bacterial cell numbers. Unlike using ATP, AK is present at constant levels in all bacteria, irrespective of the organism's metabolic state and can be used to detect bacteria at much lower levels due to the ADP ' ATP amplification process. *The rapid AK assay is up to 100 times more sensitive than standard ATP bioluminescence and up to 1 million times more sensitive than optical measurements (colorimetric, turbidometric).*

The assay is based on generic gram-negative bacterial lysis and AK mediated bioluminescence. The bacteria in a sample are non-selectively lysed, releasing the AK from the bacteria into the sample matrix. An excess of highly purified ADP is added to the sample and the AK catalyses the conversion of the ADP to ATP. Thermostable firefly luciferase and luciferin is added to the sample and light is emitted in the presence of the ATP. This is carried out in the presence of the reaction co-factor. The photon emission is measured using a luminometer to provide a reading quoted in terms of Relative Light Units (RLU).

Marc Green who managed the development at Acolyte said "Users can incorporate any commercially available nutrient media and solutions typically used in microbiology, or use bespoke sample matrixes. The assay enables users to add substances to standard nutrient media, such as antimicrobial agents or growth supplements. We intend to further develop the RapiTECT name through the development of research assays for all prokaryotic and eukaryotic cells."

The gram-negative assay is currently undergoing external evaluation at a major life sciences institute and will be available from the end of July 2005.

www.acolytebiomedica.com

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Note to editors:

BacLite®

The BacLite system uses AK rapid® technology developed by the Defence Science and Technology Laboratories (Dstl), an agency of the Ministry of Defence at Porton Down, Wiltshire.

Acolyte Biomedica Ltd was formed in February 2000 by ANGLE plc and signed its first agreement with Dstl (then DERA) later that year. The Company shareholders include ANGLE plc, Partnerships UK, Porton Capital and Dstl. It employs 22 staff in its laboratories at Porton Down, Wiltshire, UK.

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