

baculoQUANT™ *One-step titration kit*

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The baculovirus expression system is widely used for the production of foreign proteins in insect cells. For optimal protein production, it is essential that an accurate titre of virus be obtained prior to infection. Traditionally baculoviruses have been titred by plaque assay, end point dilution and antibody-based assays. These methods often need 4 – 6 days to yield a virus titre and involve procedures which require expertise in cell culture and virus handling.

To overcome the problems incurred during traditional titration protocols, Oxford Expression Technologies have developed a novel one-step virus titration kit which can give a result within 2 hours without the need for plaque assays or immuno-assays.

baculoQUANT™ titration is based on quantitative real-time PCR (QPCR) and ABgene flourogenic probes specifically designed to the viral genome. The target specific probe consists of an oligonucleotide tagged with 2 dyes, TAM and FAMRA, which due to their proximity results in fluorescent resonance energy transfer (FRET), with TAMRA greatly reducing the fluorescence produced by TAM.

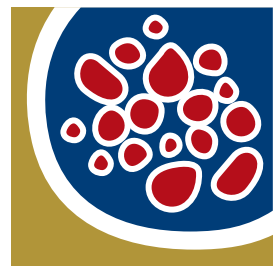
During the QPCR reaction, the dual-labelled probe, which has hybridised between two primer sites, is digested by the endonuclease activity of the polymerase, cleaving the reporter dye from the probe and interrupting the FRET. Subsequent rounds of PCR result in a successive increase in fluorescence intensity proportional to the amount of PCR product produced,

which is in turn directly proportional to the quantity of viral DNA. By knowing the quantity of viral DNA present within the sample it is then possible to quantify the titre of the budded virus sample.

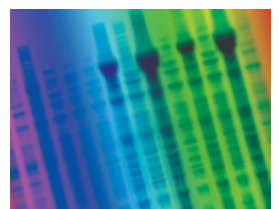
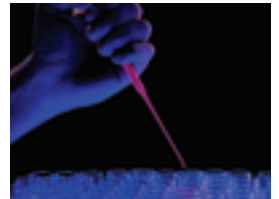
This fast and cost-effective method of recombinant virus titration will give accurate titres within 2 hours and has the potential to dramatically enhance the potential productivity of baculovirus biotechnology.

the science of baculovirus expression™

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