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*Technical Notes*

**Detect ion of Ox yge n Consum pt ion of Cult ure d Adhe re nt Ce lls by Bea d I nject ion Spect rosc opy**

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**This paper describes a method for detecting oxygen consumption of adherent cell cultures. The sensing is based on oxygen-dependent quenching of the phospho- rescence of a Pt-porphyrin complex immobilized on microcarrier beads, which are used as the cell culture substrate. Bead injection, a recent variant of the flow injection technique, is used to pack an aliquot of the beads into a small sensing layer that can be easily and rapidly renewed. The technique is tested on a model system of Chinese Hamster Ovary M1 cells grown on Cytodex-3 microcarrier beads. Cellular respiration is monitored through O2 consumption measured across a period of 3 min. The method is validated by detecting the impairment of aerobic metabolism caused by 1.5 mM amobarbital. Further, it is shown to have enough precision to distin- guish even more subtle changes, such as the increase in oxygen consumption caused by stimulation of the mus- carinic m1 receptor with 100 *µ*M carbachol.**

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