



Introductory Information

CELLNO is a patented sampling device (shown in **Figure 1**) developed by Dr. Megan Frost of Michigan Technological University for real time measurement of nitric oxide from cell cultures. This device offers the researcher the ability to culture live cells in a sterile chamber with the ability to monitor real time NO production from the cells. Nitrogen or ambient air is used as a carrier gas to sweep the NO produced by the cells into the Zysense NOA (Nitric Oxide Analyzer, formerly Sievers) 280i, as shown in **Figure 2**.

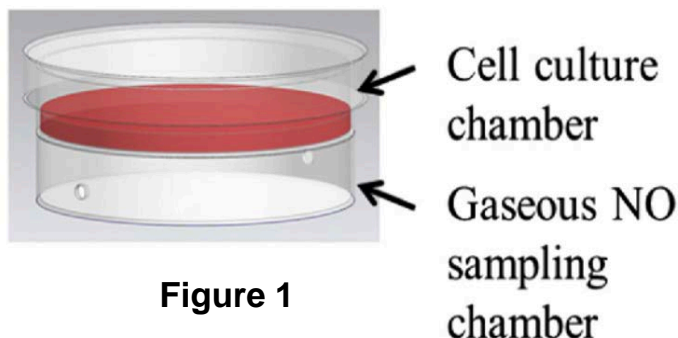


Figure 1

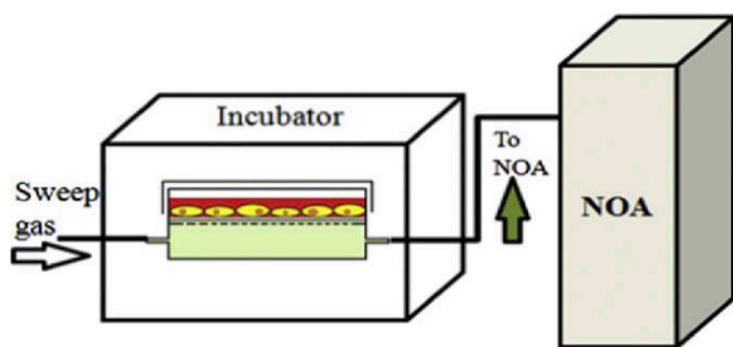


Figure 2

It has been clearly shown that measurement techniques like the Greiss Assay and Electrochemical methods are not reliable (Anal. Chem., **2013**, 85 (3), pp 1957-1963) for in vitro NO measurements and that chemiluminescence is better suited for reliable measurement for actual NO determination. The results of this study highlight the importance of measurement strategy for accurate NO analysis and reporting NO-based biological activity.

In order to achieve reliable, repeatable, real-time data, a highly robust, sterile cell culture chamber is needed to quantitatively measure NO production. **CELLNO** was developed to obtain real-time NO data with temporal and spatial control that is impractical in biologically relevant media by conventional detection methods. **CELLNO** has been optimized to eliminate foaming with the use of a sweep gas and to precisely record NO released from the cells.

The Zysense NOA 280i chemiluminescence analyzer is widely used to measure the reaction kinetics of and for the accurate measurement of Nitric Oxide.