

## **Simplification of off line analysis of microdialysis samples utilizing capped bar-coded Matrix inserts and an Eicom fraction collection setup.**

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Paramount to the success of a microdialysis experiments is stabilization of samples upon collection. Depending on the nature of the fraction collector the transfer of samples adds to the complexity of the process. Endeavors to simplify the sample collection resulting from microdialysis have been initiated in our laboratory with the goal of making the process more robust and less time consuming. Towards this end we have implemented the usage of capped bar-coded Matrix tubes in a 96 well plate format and an Eicom fraction collector.

The Eicom fraction collector offers several advantages over other commonly used fraction collectors. Foremost of these is that it allows for collection of samples in a 96 well plate format eliminating the need for sample transfer. In addition the system allows for collection through 1, 2 or 4 channels facilitating the implementation of the system for studies with 1, 2 or 4 microdialysis probes. Therefore the option exists for studies involving single or dual probe implantations.

In conjunction with the Matrix tubes the samples collected are accurately chilled to 4°C as determined by measurements performed directly in the tubes. The tubes are bar-coded which facilitates sample tracking and eliminates the need for labeling. The accurate manufacturing of the tubes and V shaped bottoms also allow for accurate pickup of low sample volumes by commonly used autosamplers.

Capping of the Matrix inserts further improves the sample collection process by stabilizing the samples (limiting oxidation and evaporation) and by assisting the collection process, i.e., caps strip off residual droplets from the fraction collector needle. The greater accuracy of sample collection achieved using this setup was demonstrated by weighing the inserts before and after collection. Resulting plots of the weights collected demonstrated the benefits of this improved collection procedure.

Utilization of this fraction collection procedure provides an improved work flow (far less manual handling of samples) and provides accurate levels of stabilized samples by achieving the set temperature (4°C) and by reduction of air exposure. The format of the resulting samples facilitates their analysis, leading to a significantly improved microdialysis work flow.