

Shodex AFpak ACH-494

## 1. Introduction

Shodex AFpak ACH-494 is packed with a gel on which two enzymes, choline oxidase and acetylcholine esterase, are immobilized. Choline and acetylcholine are decomposed to generate hydrogen peroxide when they pass through this column.

ACH-494 can be used in the detection system of the liquid chromatograph for the analysis of choline and acetylcholine, combined with an amperometric detector (platinum electrode) which detects the generated hydrogen peroxide.

## 2. Specifications

Column size: 4.6mm  $\phi$   $\times$  10mm

Column material: PEEK

Packing material: Hydrophilic polyacrylate gel on which choline oxidase and acetylcholine esterase are immobilized

Solvent packed: 0.01M phosphate buffer (pH 7.4) + 1.0M NaCl

Working temperature: 35~37 °C

Working pH : 8.0 ~ 8.5

## 3. Procedure for operation

- 1) After completely equilibrating the liquid chromatograph with the eluent to be used (e.g. 0.1M phosphate + 1mM sodium octylsulfate + 1mM tetramethyl ammonium chloride, pH 8.0), connect the analytical column and deliver the eluent for about 10 minutes at 1.0ml/min.
- 2) Connect ACH-494 and then the amperometric detector (platinum electrode) after the analytical column.
- 3) Start to deliver the eluent and, when the detection cell has been replaced with the eluent, switch on the detector.  
When the baseline has been stabilized, start the analysis.
- 4) After the analysis is over, remove ACH-494 and store in a refrigerator (4°C) with the ends firmly plugged.

#### 4. Caution

- 1) The immobilized enzymes lose activity in contact with an organic solvent. Do not use an eluent containing an organic solvent.
- 2) Addition of a preservative (sodium azide, etc.) to the eluent may cause the immobilized enzymes to lose activity.
- 3) The enzyme activity is maximum at 35~37°C. Install ACH-494 in the column oven thermostatted at 35~37°C together with the analytical column.
- 4) The enzyme activity is maximum at pH 8.0~8.5 and is lost above pH 9 or below pH 3.
- 5) The life of ACH-494 is normally 300~400 samples, but may be longer or shorter depending on the sample.
- 6) Store ACH-494 in a refrigerator (4°C) with both ends plugged. The activity does not deteriorate for half a year or more under the refrigerated state.