

ChromTech RePeat Extraction Cartridges

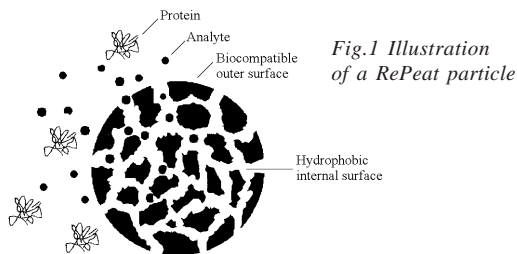


Fig.1 Illustration of a RePeat particle

- A large number of samples on the same cartridge
– Repeated use, reduced cost per sample
- Easy to use
- High recoveries of highly protein bound drugs

RePeat is a unique off-line extraction cartridge designed for **repeated extractions** of drugs from complex matrices such as plasma, serum, milk, supernatants of cell cultures and fermentation broth. In contrast to ordinary disposable solid phase extraction columns each RePeat cartridge can be used for a large number of samples. This will highly **reduce the cost per sample**.

RePeat is based on polymeric particles with a hydrophobic internal surface and a biocompatible external surface. The biocompatibility has been obtained by attachment of the plasma protein α_1 - acid glycoprotein (AGP) on the external surface of the particles. Immobilized AGP is an extremely stable protein which tolerates the organic solvents used in off-line solid phase extractions. The pores of the particles are small enough to exclude the plasma proteins and other macromolecular compounds whereas drug molecules and other low molecular mass compounds can penetrate the pores and be adsorbed to the hydrophobic inner surface (see Fig.1).

Since RePeat is polymer based, the cartridge can be used between pH 2 to 13. This property will give possibilities of extracting ionized analytes in their uncharged form. The uncharged analyte has higher affinity to the hydrophobic inner surface of the RePeat particle giving an improved recovery.

RePeat is available in 1.5mL (25 mg) cartridges.

Off-Line Extraction with RePeat

The wide pH limit of RePeat enables the extraction of basic compounds at high pH where they are present in their uncharged form. The elution step can be performed in two different ways:

- by using an organic solvent mixed with triethylamine (for basic compounds) or with acetic acid (acidic compounds)
- by using the mobile phase used for HPLC-analysis (a mix of buffer and organic solvent).

If the analysis requires a concentration step, the former procedure is preferred. However, when eluting the analyte with a buffer/organic solvent mixture, it is possible to inject the sample directly without evaporation and reconstitution. This is a very time saving and convenient procedure when applicable. Examples of different extraction procedures used for the analysis of the amines are available upon request.

Repeat Extraction Cartridges Ordering Information

Cat. No.	Description
RE252	RePeat 25mg, 2 pcs
RE256	RePeat 25mg, 6 pcs
RE2512	RePeat 25mg, 12 pcs
RE2516	RePeat 25mg, 16 pcs
RE2550	RePeat 25mg, 50 pcs

Extraction procedure for ibuprofen in serum

RePeat 25 mg cartridge

Conditioning: 1-2mL 1% acetic acid in methanol
1mL distilled water

Application: 100 μ L sample (serum mixed 1:1 with 4% 2-propanol in 100mM formic acid)

Washing: 1mL 4% 2-propanol in 100mM formic acid 0.5mL distilled water

Elution: 1mL 1% acetic acid in methanol. Evaporate and reconstitute.

Sample: Ibuprofen, 6.9 μ g/mL, in serum

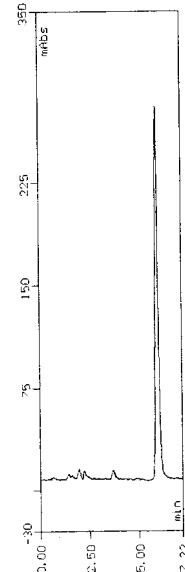
Inj. vol.: 100 μ L (the eluate evaporated and reconstituted in 300 μ L 35% acetonitrile in 25mM formic acid)

Column: Zorbax SB-CN, 150x4.6mm, 5 μ m + guard, 12.5x4.6mm, 5 μ m

Mobile phase: 30% acetonitrile in 50mM ammonium acetate pH 6.0

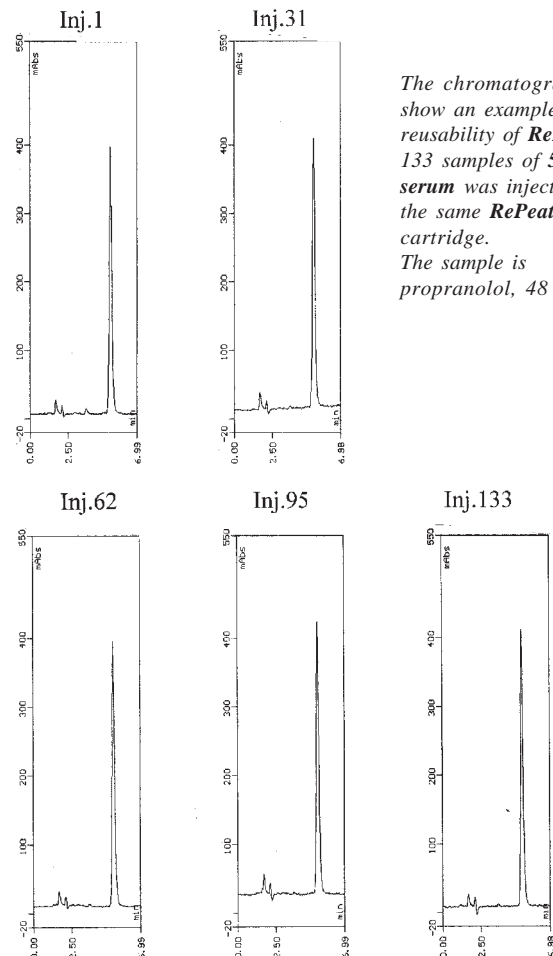
Flow: 1mL/min.

Detection: Fluorescence: ex=225nm, em= 555nm



Extraction of Propranolol in serum

Same RePeat 25 mg cartridge



The chromatograms show an example of the reusability of RePeat. 133 samples of 500 ml serum was injected onto the same RePeat 25 mg cartridge. The sample is propranolol, 48 ng/ml.