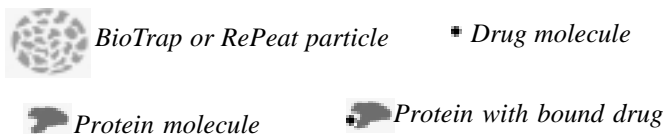


## The BioTrap and RePeat Extraction Process

In this Application Bulletin the extraction of drugs from serum/plasma using the on-line technique with **BioTrap 500** or the off-line technique with **RePeat** will be explained.

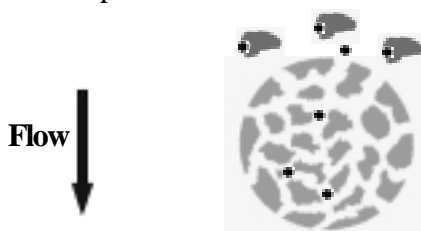
### Key to the signs:



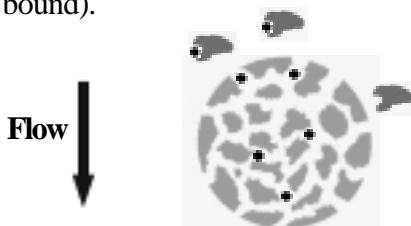
### The principles behind the extraction are the following:

1. Serum/plasma containing protein bound drug and free drug is applied to the extraction column. **The total concentration (free + protein bound) of the drug is determined using the BioTrap and RePeat columns.**

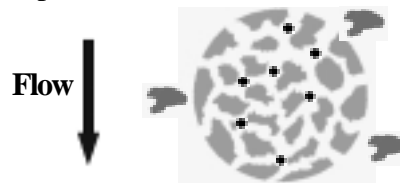
2. The free drug is extracted to the internal hydrophobic surface of the particles. The drug/protein binding is an equilibrium which means that the ratio between protein bound and free drug is constant.



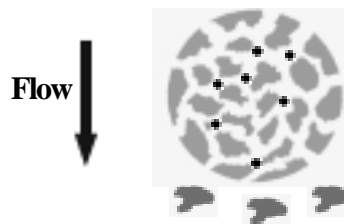
3. When free drug is extracted, new free drug will be released and extracted, as the sample zone migrates through the extraction column, i.e. the total drug concentration is determined (free + protein bound).



4. The protein molecules are transported between the particles to waste.



5. After the extraction, the adsorbed drug is eluted from the extraction column onto the analytical column, either on-line with **BioTrap 500** or using an off-line process with **RePeat**.



During the extraction it is very important that the mobile phase used is compatible with the plasma proteins to avoid precipitation. In most cases the extraction mobile phase is composed of a buffer and a low concentration of 2-propanol.

During the elution of the extracted drug from the extraction column, the mobile phase will not be in contact with the plasma proteins. The composition of the elution mobile phase is determined by the chromatography on the analytical column. In most cases the elution mobile phase is composed of a buffer and 20-35% acetonitrile.

A Powerpoint presentation showing the extraction process is available. Contact [ingerh@chromtech.co.uk](mailto:ingerh@chromtech.co.uk) to obtain a copy via email.