

WINLAB PTY LTD

2 Pinnacle St, Brendale, Queensland, Australia, 4500
 PO Box 5007, Brendale, Queensland, Australia, 4500
 Ph: +61 7 3205 5233: Fax: +61 7 3205 1209
 Email: info@winlab.com.au www.winlab.com.au



Chromtech at Winlab

Chromtech, formerly of Sweden and now based in the UK, manufactures three specific phases (CHIRAL-AGP, CHIRAL-CBH and CHIRAL-HSA) for the reversed phase HPLC separation of chiral compounds. Chromtech also produces a series of on-line extraction for sample preparation.

Chromtech Chiral Phases

- Spherical porous silica
- Reversed-phase applications
- Unique separation characteristics
- Hundreds of literature references
- Hundreds of applications available

The CHIRAL-AGP column has the broadest applicability of the three chiral phases, separating a wide range of compound types. It is often the column of choice when starting a method development. CHIRAL-CBH has a narrower applicability, preferentially separating compounds containing one or more nitrogens together with one or more hydrogen accepting or donating groups, and is particularly suited for the analysis of hydrophilic amines. CHIRAL-HSA is also more suitable for specific applications, particularly very hydrophilic acids.

Phase	Chiral Selector	Particle Size (um)	Applications
CHIRAL-AGP	□1-acid glycoprotein	5	Most compound types – Amines, acids, alcohols, amides, esters, sulphoxides
CHIRAL-CBH	Cellobiohydrolase	5	Nitrogen- containing compounds also containing alcohol, phenol, carbonyl, amide, ether or ester group(s)
CHIRAL-HSA	Human Serum Albumin	5	Weak and strong acids, zwitterionic and non-protolytic compounds

Method Development

Analytes are retained on these columns by a combination of ionic binding (charged solutes), hydrophobic interaction and hydrogen bonding. Consequently, separations are affected by pH and the nature and concentration of aqueous buffer and organic modifier.

The effect of changing the pH of the eluent on the resolution of 2-phenoxypropionic acid on a CHIRAL-AGP column. At pH 7 the analyte is totally ionised. Lowering the pH results in higher retention due to repulsion between the analyte and the chiral stationary phase.

Parameter	Typical Conditions	Effect of Varying Parameter
PH	4 - 7	Variable
Buffer	Phosphate, Acetate 0.01 – 0.1M	Increase in buffer concentration can increase retention and enantioselectivity.
Organic Solvent	Propan-2-ol, Acetonitrile, Methanol 0 – 15%	Selection of solvent strongly affects enantioselectivity. Higher organic solvent ratios reduce retention time for each phase. For both CHIRAL-AGP and –HAS columns enantioselectivity is simultaneously reduced, whilst for CHIRAL-CBH columns it is often increased.

WINLAB PTY LTD

2 Pinnacle St, Brendale, Queensland, Australia, 4500
 PO Box 5007, Brendale, Queensland, Australia, 4500
 Ph: +61 7 3205 5233: Fax: +61 7 3205 1209
 Email: info@winlab.com.au www.winlab.com.au

**Columns for LC-MS**

Shorter Chromtech columns are now available for rapid analysis and LC-MS applications. In order to convert from UV to LC-MS method, in addition to decreasing column dimensions, phosphate buffers are replaced with ammonium acetate and the concentration of buffer and modifier (organic) reduced.

Ordering Information

Chiral Phase	Column Dimensions (mm)						Guard Cartridge ₁ (2/pk)	
	50 x 2.0	100 x 2.0	150 x 2.0	50 x 3.0	100 x 3.0	150 x 3.0	10 x 2.02	10 x 3.03
AGP	AGP50.2	AGP100.2	AGP150.2	AGP50.3	AGP100.3	AGP150.3	AGP10.22	AGP10.32
CBH	CBH50.2	CBH100.2	CBH150.2	CBH50.3	CBH100.3	CBH150.3	CBH10.22	CBH10.32
HSA	HSA50.2	HSA100.2	HSA150.2	HSA50.3	HSA100.3	HSA150.3	HSA10.22	HSA10.32

Chiral Phase	Column Dimensions (mm)				Guard Cartridge ₁ (2/pk)	
	50 X 4.0	100 X 4.0	150 X 4.0	100 X 10.0	150 X 10.0	10 X 4.04
AGP	AGP50.4	AGP100.4	AGP150.4	AGP100.10	AGP150.10	AGP10.42
CBH	CBH50.4	CBH100.4	CBH150.4	CBH100.10	CBH150.10	CBH10.42
HSA	HSA50.4	HSA100.4	HSA150.4	HSA100.10	HSA150.10	HSA10.42

Drug-Plasma Protein Binding Studies

The degree of drug-plasma binding has a significant effect on the pharmacological properties of a drug. The binding is also stereoselective in nature due to the inherent chirality of plasma proteins. HPLC is a convenient method for the determination of the degree of drug-plasma protein binding. Columns based on human serum albumin (HSA), alpha-1-acid glycoprotein (AGP). Rat serum albumin (RSA), dog serum albumin (DSA) and mouse serum albumin (MSA) are available.

The percentage binding (P) is calculated from the expression: $P = 100 (k' / k' + 1)$ where 'k' is the retention factor of the drug.

Ordering Information

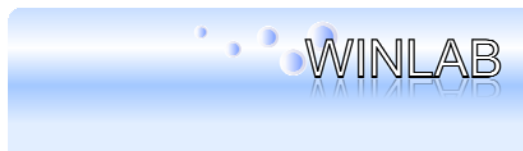
Phase 1	Column Dimensions (mm)	
	50 X 3.0	50 X 4.0
CHIRAL-RSA	RSA50.3	RSA50.4
CHIRAL-DSA	DSA50.3	DSA50.4
CHIRAL-MSA	MSA50.3	MSA50.4

Bio Trap 500

- Eliminate time-consuming clean-up procedures
- Direct injections of serum/plasma
- High accuracy and precision
- Automated bioanalysis
- Conventional HPLC equipment

WINLAB PTY LTD

2 Pinnacle St, Brendale, Queensland, Australia, 4500
 PO Box 5007, Brendale, Queensland, Australia, 4500
 Ph: +61 7 3205 5233: Fax: +61 7 3205 1209
 Email: info@winlab.com.au www.winlab.com.au



Traditional isolation procedures of drugs from a biological matrix can involve several stages and be very time consuming. The Bio Trap 500 series of columns (C18, C8 or MS) enables bioanalytical methods with very high accuracy and precision to be developed by using automated on-line sample preparation. Direct injection of plasma, serum or other complex matrices (after centrifugation) results in on-line removal of proteins and other macromolecules prior to drug analysis on the analytical column. Using the column switching approach, superior detection limits can be achieved due to the possibility of injecting large sample volumes (up to 1000ul) on the extraction column.

The Bio Trap 500 columns are based on silica material with a biocompatible outer surface and a hydrophobic internal surface with C8 or C18 groups. The external surface is covered by α 1-acid glycoprotein (AGP). The pores of the particle are such that large protein molecules are excluded and directly flushed to waste, whilst smaller drug molecules penetrate and adsorb to the inner surface.

The Bio Trap 500 MS is designed for MS detection. It has a wider pH range (2-10), permitting the extraction of acids and bases in their uncharged form, eliminating the need for ion-repair reagents. Bio Trap MS can also be used with fluorescence, UV and EC detection.

Bio Trap Phase	Column Dimensions (mm)			
	20 X 4.0 (with holder)	20 X 4.0 (2/pk)	20 X 2.0 (with holder)	20 X 2.0 (2/pk)
C8	B8204K	B8204C	B8202K	B8202C
C18	B18204K	B18204C	B18202K	B18202C
MS	BMS204K	BMS204C	BMS202K	BMS202C

RePeat

- **A large number of samples on same cartridge**
- **Reduced cost per sample**
- **Easy to use**
- **High recoveries of protein-bound drugs**

RePeat is a unique off-line extraction cartridge designed for repeated extractions of drugs from complex matrices. In contrast to ordinary disposable SPE cartridges, each RePeat cartridge can be used for a large number of samples. RePeat is based on polymeric particles with a hydrophobic internal surface and AGP attached to the outer surface.

Ordering Information

RePeat (25mg)	6/pk	12/pk	16/pk	50/pk
	RE256	RE2512	RE2516	RE2550