

Columns for drug-protein binding studies 2

In ChromTech Application Bulletin No.1-2003 information could be found on columns for drug protein binding studies:

HSA - human serum albumin

AGP - α_1 -acid glycoprotein

RSA - rat serum albumin

DSA - dog serum albumin

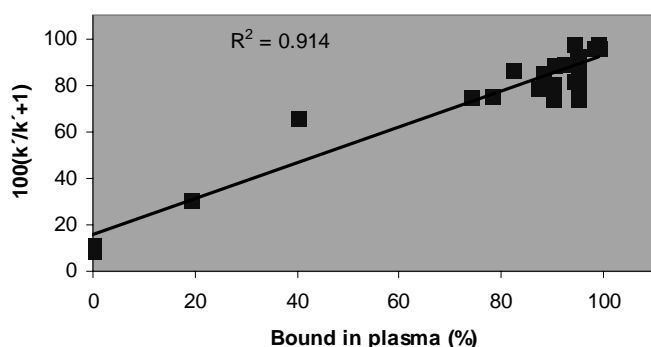
MSA - mouse serum albumin

as well as columns based on albumins from other species.

Correlation of chromatographic data

When using the above columns for drug protein binding studies it is recommended to include a set of standard drugs to correlate the chromatographic data against published protein binding data. Literature values for plasma protein binding to use for correlation of binding to HSA can be obtained from Goodman A. and Gilman A.G., *The Pharmacological Basis of Therapeutics*, 9th Edition, McGraw-Hill, New York, p.1712-1792 (1996).

Below is a plot with results obtained from chromatography of standard drugs on a CHIRAL-HSA column. The results are correlated to data from Goodman & Gilman. All data are shown in the table.



Column: CHIRAL-HSA 50x3.0 mm

Mobile phase: 6% 2-propanol in 20 mM potassium phosphate buffer pH 7.0

Flow rate: 0.5 ml/min

Detection: UV 210 nm

Drug compound	Bound in plasma* (%)	100(k'/k'+1)
Isoniazid	0	11.8
Ethosuximid	0	9.2
Primidone	19	31
Folinic acid	40	65.9
Carbamazepine	74	74.8
Diltiazem	78	75.3
Desipramine	82	86.8
Propranolol	87	78.8
Budesonide	88	85.4
Indometacin	90	80.2
Verapamil	90	74.4
Imipramine	90.1	88.9
Nortriptyline	92	89.2
Sulindac	94	97.9
Fluoxetine	94	81.7
Amitriptyline	94.8	90.8
Propafenone	95	81.4
Carvedilol	95	92.6
Paroxetine	95	87.3
Omeprazole	95	74.2
Nitrendipine	98	96.4
Nicardipine	98.8	97.5
Ketoconazol	99	96.3

* Values from Goodman A. and Gilman A.G., *The Pharmacological Basis of Therapeutics*, 9th Edition, McGraw-Hill, New York, p.1712-1792 (1996)

The 100(k'/k'+1)-values are calculated from the chromatographic data obtained on CHIRAL-HSA, as described in ChromTech Application Bulletin No.1 2003.

New webpage

ChromTech has also launched a new webpage where the drug protein binding columns are presented. Please visit

www.chromtech.co.uk/protbind

to get updated information on the columns and these type of studies. Please make a [link](#) from your webpage to this new webpage.