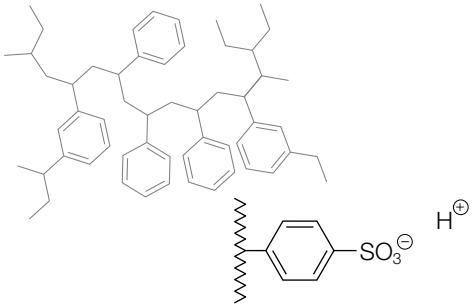
Modern polymeric CHROMABOND® SPE phases

CHROMABOND® HR-XC

Technical data

Strong cation exchanger based on polystyrene-divinylbenzene copolymer (PS / DVB)

SPE mode:	Ion exchange and reversed phase (mixed-mode)
Interactions:	Ionic, hydrophobic and π–π
Particle shape:	Spherical
pH stability:	1–14
Particle size:	85 µm and 45 µm
Pore size:	65–75 Å
Specific surface:	800 m^2/g
RP capacity:	300 mg/g (caffeine in water)
Exchange capacity:	1.0 meq/g, pKa < 1



Recommended application

- Basic active ingredients from heavily matrix-contaminated samples, e. g., urine, plasma, serum
- Fungicides from food
- Basic analytes, e. g., amines
- Bases with pKa 2–10

Good to know

A possible replacement for:

- Oasis® MCX
- Strata™-X-C
- StyreScreen® DBX
- HyperSep™ Retain CX

Standard protocol for CHROMABOND® HR-XC

MN Appl. No. 304790

Column type:
CHROMABOND® HR-XC / 3 mL / 200 mg, REF 730952

Sample pretreatment:

Individual sample preparation in reference to the compounds and matrix (adjust pH value if necessary).

Conditioning:	5 mL methanol, then 5 mL water (do not let run the column dry!)
Sample aspiration:	The prepared sample is passed through the column by vacuum or pressure
Washing 1:	2 mL 0.1 M HCl in water
Washing 2: / Elution 1:	2 mL methanol (elution of neutral and acidic compounds)
Drying:	With nitrogen or air
Elution 2:	5 mL methanol / 5 % NH_3 (elution of basic compounds)

Further analysis:

Evaporation and reconstitution (if necessary); HPLC or GC

These conditions are a starting point for SPE method development. Further optimization may be required to improve results.

SPE hardware formats

Check out our different hardware types, e. g., CHROMAFIX® cartridges

Applications

Enrichment of benzodiazepines

MN Appl. No. 306720

Chromatographic conditions

Columns: CHROMABOND® HR-XC 45 µm / 3 mL / 60 mg

MN REF: 730956P45

Pretreatment: 400 µL methanolic standard solution were diluted with phosphate buffer pH 6.0 to 20 mL
2.5 mL of this solution are equal to 5 ng of each analyte

Conditioning: 2 mL methanol, 2 mL phosphate buffer pH 6.0

Aspiration: 2.5 mL of pretreated sample solution is passed through the column at a flow of 1–2 mL/min.

Washing: 2 mL phosphate buffer pH 6.0, 2 mL methanol / water (30:70, v/v), 3 mL 0.1 mol/L hydrochloric acid, 2 mL methanol / water (30:70, v/v), 0.1 mL methanol followed by 1 min drying, 2 mL methanol / water (30:70, v/v)

Drying: 5 min with a slight nitrogen stream

Elution: 2 x 1.5 mL 25 % aqueous ammonia solution / ethylacetate (2:100, v/v)

Solvent change: Eluate is evaporated to dryness at 30 °C under a stream of nitrogen and then redissolved in organic solvent suited for the subsequent analysis.

Further analysis:

HPLC determination of recovery rates with EC 150/2 NUCLEOSHELL® Bluebird RP 18, 2.7 µm (REF 763436.20) in reference to MN Appl. No. 128890

Compound	Recovery rate [%]
Nortetrazepam	85
Tetrazepam	85
α-Hydroxytriazolam	87
Zaleplon	84
Nitrazepam	92
Oxazepam	104
Nordiazepam	83
N-Desmethylflunitrazepam	90
Lorazepam	89
Clonazepam	88
Desalkylflurazepam	102
Temazepam	103
Flunitrazepam	89
Lormetazepam	109
Clobazam	90
Diazepam	98