

CHROMABOND® HR-XA

Technical data

Strong anion 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

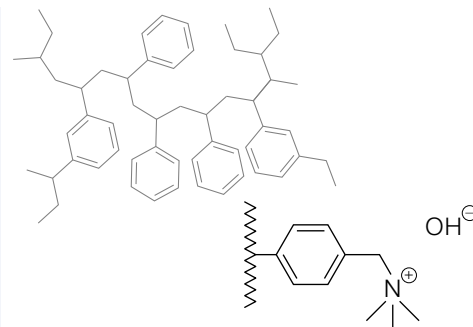
Particle size: 85 μ m and 45 μ m

Pore size: 55–65 Å

Specific surface: 850 m²/g

RP capacity: 350 mg/g (caffeine in water)

Exchange capacity: 0.25 meq/g, pKa ~ 18



Recommended application

- Acidic active ingredients from heavily matrix-contaminated samples, e. g., urine, plasma, serum
- Phenolic acids
- Acidic herbicides
- Weak/medium-strength acids with pKa 2–8

Good to know

A possible replacement for:

- Oasis® MAX
- Strata™-X-A
- HyperSep™ Retain AX
- StyreScreen® QAX



Standard protocol for CHROMABOND® HR-XA

MN Appl. No. 304970



Column type:
CHROMABOND® HR-XA / 3 mL / 200 mg / REF 730951

Sample pretreatment:

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

Conditioning: 5 mL methanol, then 5 mL water
(do not let run the column dry!)

Sample aspiration: The basic sample is passed through the column by vacuum or pressure (max. 1000 mL sample volume)

Washing 1: 2 mL 0.1 M NaOH in water

Washing 2: / Elution 1: 2 mL methanol
(elution of neutral and basic compounds)

Drying: With nitrogen or air

Elution 2: 5 mL methanol / 1-10 % formic acid
(elution of acidic 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.

Successful filtration



We recommend to use CHROMAFIL® Xtra syringe filters in combination with our SPE columns. For further information, please visit www.mn-net.com/chromafil.



Modern polymeric CHROMABOND® SPE phases

Applications

Fractions of acidic and basic analytes from serum

MN Appl. No. 305020

Chromatographic conditions

Column: CHROMABOND® HR-XA / 85 µm / 3 mL / 200 mg
 MN REF: 730951
 Pretreatment: 1 µg/mL analytes in serum, adjusted on basic pH with 1 N NaOH
 Conditioning: 5 mL methanol, then 5 mL water (Do not let run the column dry!)
 Aspiration: The prepared sample is passed through the column by vacuum
 Washing: With 2.5 mL water impurities are removed
 Drying: With nitrogen or air
 Elution: Fraction A (basic analytes) is eluted with 5.0 mL methanol
 Fraction B (acidic analytes) with 5.0 mL methanol / 10 % formic acid

Evaporation and reconstitution with 1 mL of mobile phase from subsequent HPLC.

Washing: 1.6 mL acetonitrile, 20 µL/s

Subsequent analysis:

Fraction A: HPLC determination on EC 125/4 NUCLEODUR® C8 Gravity, 5 µm (REF 760751.40) in reference to MN Appl. No. 118520

Fraction B: HPLC determination on EC 125/4 NUCLEODUR® C18 Gravity, 5 µm (REF 760100.40) in reference to MN Appl. No. 122230

Recovery rates:

Fraction A	Recovery [%]	Fraction B	Recovery [%]
Protriptyline	75	Suprofen	96
Nortriptyline	69	Naproxen	86
Doxepine	72	Tolmetin	85
Imipramine	80		
Amitriptyline	78		
Trimipramine	73		

Acidic pharmaceuticals from serum

MN Appl. No. 305000

Chromatographic conditions

Column: CHROMABOND® HR-XA / 85 µm / 3 mL / 200 mg
 MN REF: 730951
 Pretreatment: 1 µg/mL pharmaceuticals in serum, adjusted on basic pH with 1 N NaOH
 Conditioning: 5 mL methanol, then 5 mL water (Do not let run the column dry!)
 Aspiration: The prepared sample is passed through the column by vacuum
 Washing: With the following washing mixtures impurities are removed: a) 2.5 mL water · b) 2.5 mL 0.1 N NaOH · c) 5.0 mL methanol
 Drying: With nitrogen or air
 Elution: Analytes are eluted with 5 mL methanol / 1 % formic acid

Evaporation to dryness and reconstitution with 1 mL of mobile phase from subsequent HPLC.

Subsequent analysis:

HPLC determination of recovery rates with EC 125/4 NUCLEODUR® C18 Gravity, 5 µm (REF 760100.40) in reference to MN Appl. No. 122840

Recovery rates:

Compound	HR-XA [%]	Oasis® MAX [%]
Ketoprofen	90	85
Fenoprop	104	123
Fenoprofen	98	69
Flurbiprofen	106	98
Ibuprofen	88	58
Carprofen	69	89
Diclofenac	95	94
Meclofenamic acid	92	93

