



Select the different Extraction Procedures Methods:

Extraction Procedures for Reversed Phases

Packings of Reverse Phase are composed of a silica backbone bonded with hydrocarbon chains.

Packings of Reverse Phase are used to isolate relatively non-polar compounds from a polar matrix.

Reverse Phase packings require conditioning with an organic solvent followed by an aqueous solvent prior to use.

Elution of non-polar compounds requires less polar solvents, and moderately polar compounds are accomplished with middle polarity solvents.

1. Conditioning:

Rinse packing bed with 3-5 ml of methanol followed by 3-5 ml of water or buffer (don't let packing bed dry before adding sample).

2. Sample application:

Apply sample solution to the top of the packing bed. Push or draw the sample through the bed at a flow rate of 1-5 ml/min. Collect sample for analysis if desired compound has passed through the packing bed without being retained.

3. Wash:

If the desired compound was retained, wash off any weakly retained interfering compound(s) with a polar solvent.

4. Elution:

Elute desired compound with 1-2 ml of a non-polar solvent and collect for analysis.

Extraction Procedures for Normal Phases

Packings of Normal-phase are composed of a silica backbone bonded with carbon chains containing polar functional groups. Packings of Normal Phase are used to isolate polar compounds from a non-polar matrix.

Normal Phase packings require conditioning with non-polar solvents.

Elution is accomplished with more polar solvents.

1. Conditioning:

Rinse packing bed with 3-5 ml of non-polar solvent (don't let packing bed dry before adding sample).

2. Sample application:

Apply sample solution to the top of the packing bed. Push or draw the sample through the bed at a flow rate of 1-5 ml/min. Collect sample for analysis if desired compound has passed through the packing bed without being retained.

3. Wash:

If the desired compound was retained, wash off any weakly retained interfering compound(s) with a non-polar solvent.

4. Elution:

Elute desired compound with 1-2 ml of a polar solvent and collect for analysis.

Extraction Procedures for Ion-Exchange

Packings of Ion Exchange are composed of different materials backbone bonded with carbon chains terminated by a negatively or positively charged functional groups.

Packings of Ion Exchange are used to isolate charged or potentially charged compounds.

Anions and cations are retained on the corresponding resin by exchanging the anion or cation in the sample with the anion or cation on the resin.

1. Conditioning:

Rinse packing bed with 3-5 ml of de-ionized water or low ionic strength buffer (e.g. 0.0001M-0.01M).

2. Sample application:

Apply sample to the top of the packing bed. Push or draw the sample through the bed at a flow rate of 1-2 ml/min. Collect sample for analysis if desired compound has passed through the packing bed without being retained.

3. Wash:

If the desired compound was retained, wash off any weakly retained interfering compound(s) with de-ionized water or low strength buffer.

4. Elution:

Elute desired compound with 1-5 ml of a high salt concentration solution (e.g. 0.1M-0.5M) or change elution buffer pH such that the sample compound is no longer ionized and collect for analysis.

Finisterre™ SPE Applications

Extraction of Catecholamines from Urine

SPE column: TR-F034000 Finisterre™ C18/17% 100 mg/1mL column

Sample preparation: Urine, pH 8.5 with 2 M ammonium hydroxide

Conditioning: 2 x 1mL of methanol, followed by 2 x 1mL of ammonium chloride/0.5% EDTA, pH 8.5

Sample application: Addition of 1 mL of sample

Wash: 2 x 1mL of 0.2 M ammonium chloride, pH 8.5, followed by 1mL of ammonium chloride / methanol (80:20), pH 8.5

Elution: Air dry for 2 min and elute with 2 x 1mL of 0.08 M acetic acid

Extraction of Vitamin D from Serum

SPE column: TR-F034124 Finisterre™ Si 500 mg/3mL column

Sample preparation: Serum, 2 mL extracted with 7.5 mL of methylene chloride/methanol (33:67). Add 2.5mL of methylene chloride and shake. Allow phases to separate and collect the lower methylene-chloride layer

Conditioning: 3mL of anhydrous ether/hexane (1:9)

Sample application: Addition of extracted sample

Wash: 10mL of anhydrous ether/hexane (1:9)

Elution: 7.5mL of anhydrous ether/hexane (33:67)

Organochlorine Pesticides in Water

SPE column: TR-F034106 Finisterre™ CN 500 mg/6mL column

Sample preparation: River water 100 mL

Conditioning: 2.5mL methanol
2.5mL ethyl acetate
2.5mL methanol
2.5mL distilled water

Sample application: Addition of sample

Wash: Force residual water out of sorbent with air.

Elution: 2.5mL ethyl acetate

Extraction of Pyridonecarboxylic-Acid Antibacterials (PCAs) from Fish Tissue

SPE column: TR-F034146 Finisterre™ NH2 500 mg/6mL column

Sample preparation: Blend 5 g of sample is extracted with hexane/ethyl acetate 1:3 and 10 g of sodium sulfate. High speed blend and decant. Repeat and combine extracts

Conditioning: 10mL methanol, followed by 5mL of hexane/ethyl acetate 1:3

Sample application: Addition of the sample

Wash: 5mL of hexane/ethyl acetate 1:3

Elution: 10mL of acetonitrile/methanol/0.01M aqueous oxalic acid pH=3 with NaOH

Extraction of Antibiotics from Ointment

SPE column: TR-F034184 Finisterre™ Diol 500 mg/3mL column

Sample preparation: 50 mg of ointment is extracted with 2 mL of hexane. The sample forms an insoluble suspension.

Conditioning: 3mL of hexane.

Sample application: Addition of the suspension.

Wash: 2 x 1mL of hexane. Air dry the column.

Elution: 2 x 1mL of methanol/0.1 N HCl 1:1

Extraction of Polychlorinated Biphenyls (PCBs) from transformer Oil

SPE column: TR-F034168 Finisterre™ Florisil 1000 mg/6mL column

Sample preparation: 200 mg of transformer oil

Conditioning: 2 x 2mL of hexane.

Sample application: Addition of the transformer oil directly into the column.

Wash: No wash steps are needed.

Elution: 25mL of hexane and evaporate for GC/MS analysis.