

How to use ISOLUTE® PE-AX anion exchange columns for purification of reaction mixtures

This document details the use of ISOLUTE PE-AX, a strong anion exchange sorbent, for

- A) Selective extraction of acidic products
- B) Scavenging of excess acidic reagents

After synthesis, final product requires purification prior to subsequent analysis. Using selective ISOLUTE SPE columns, purification can be achieved by either:

- Selective extraction of the product (catch and release SPE), or
- Removal of excess reagent (scavenging)

A) SELECTIVE EXTRACTION OF ACIDIC PRODUCT

Column	ISOLUTE PE-AX
Capacity Guideline	Capable of purifying approximately 10 mg of product per 100 mg sorbent (varies depending on molecular weight of analyte)
Sample	Organic synthesis reaction mixture (often in DMSO)
Solvent volume	2 column volumes at each step (optimize as necessary)

- | | |
|--|--|
| 1. Sample pre-treatment | Evaporate and reconstitute in, or dilute with, acetonitrile or dichloromethane |
| 2. Column preparation | Acetonitrile (evaluate DCM rinse) |
| 3. Sample application | Apply sample |
| 4. Elution (non acidic excess reagents) | 0.1M HCl in acetonitrile |
| 5. Elution (acidic product) | 1.0M HCl in acetonitrile |

N.B. Acetonitrile is used in this procedure in place of methanol, as methanol can cause esterification of acidic products. The use of acetonitrile avoids this possibility.

Using this approach, acidic product is retained on the column, and non-acidic excess reagents are rinsed away. The product is then selectively eluted from the column in a purified form (Figure 1).

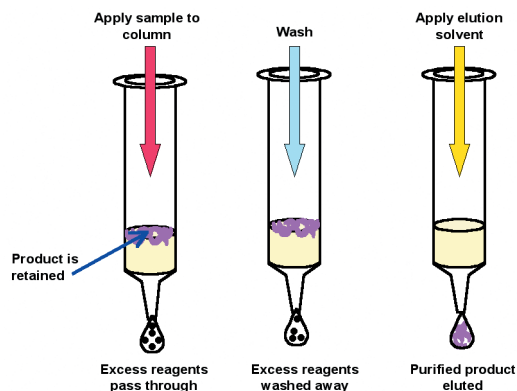


Figure 1. Selective extraction (catch and release) of acidic product

B) SCAVENGING OF EXCESS ACIDIC REAGENT

Column	ISOLUTE PE-AX
Capacity Guideline	Capable of scavenging approximately 10 mg of reagent per 100 mg sorbent (varies depending on molecular weight of reagent)
Sample	Organic synthesis reaction mixture (often in DMSO)
Solvent volume	2 column volumes at each step (optimize as necessary)

- 1. Sample pre-treatment** Evaporate and reconstitute in, or dilute with, acetonitrile or dichloromethane
- 2. Column preparation** Acetonitrile (evaluate DCM wash)
- 3. Sample application** Apply sample and collect the eluent - this contains the product

Using this approach, excess acidic reagent is retained on the column, and non-acidic products pass straight through to be collected in a purified form (Figure 2).

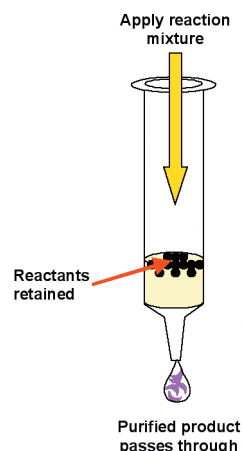


Figure 2. Scavenging of excess acidic reagent

ORDERING INFORMATION

ISOLUTE® PE-AX

Product Description	Columns / box	Part Number
500 mg / 3 mL	50	503-0050-B
500 mg / 6 mL	30	503-0050-C
1 g / 3 mL	50	503-0100-B
1 g / 6 mL	30	503-0100-C
2 g / 15 mL	20	503-0200-D
5 g / 25 mL	20	503-0500-E
10 g / 70 mL	16	503-1000-F

ISOLUTE® Tab-less PE-AX

Product Description	Columns / box	Part Number
500 mg / 3 mL	50	503-0050-BG
500 mg / 6 mL	50	503-0050-CG
1 g / 3 mL	50	503-0100-BG
1 g / 6 mL	30	503-0100-CG

High capacity 96-well configuration – ISOLUTE Array®

Product Description	Columns / box	Part Number
ISOLUTE Array PE-AX 400 mg / 2 mL wells	100	503-0400-T
ISOLUTE Array PE-AX 400 mg / 2 mL plate	1 Plate	503-0400-TP

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