



Operating Instruction Sheet

TeicoShell, TagShell, VancoShell and NicoShell

Column Description

Product Type: Analytical columns for both HPLC and SFC operations
Chiral Selectors: Teicoplanin (TeicoShell), Teicoplanin aglycone (TagShell), Vancomycin (VancoShell) and a modified macrocyclic glycopeptide (NicoShell) were covalently bonded on 2.7 μm superficially porous particles (SPPs)
Hardware: Idex[®] (Isobar) with 2 micron (inlet) and 1 micron (outlet) frits
Dimensions: Available in 5/10/15 cm length with 2.1/3.0/4.6 mm I.D.

QC Test Conditions for TeicoShell, TagShell and VancoShell

Sample: 5-Methyl 5-phenylhydantoin (2 mg/mL in methanol)
Mobile Phase: 100 % Methanol
Temperature: Ambient (23 °C)
Injection Volume: 0.1-0.8 μL
Detection: UV 220 nm

QC Test Conditions for NicoShell

Sample: Alprenolol (2 mg/mL in methanol)
Mobile Phase: 100/0.2 wt% Methanol/ammonium formate
Temperature: Ambient (23 °C)
Injection Volume: 0.1-0.8 μL
Detection: UV 263 nm

Operation Parameters

Flow Direction: Indicated by column label
Max Pressure: 400 bar for 4.6 mm I.D. columns
500 bar for 3.0 mm/2.1 mm I.D. columns
Max Flow Rate: Within pressure limits, there is no limit on the flow rate
Safe pH Range: Buffer solution: pH 2.5-7.0
Temperature: 5-45 °C (allow step-wise increase/decrease @1 °C /min)

AZYP, LLC

700 Planetarium Place, CRB Room 303, Arlington, TX 76019, USA
Phone: 817-272-9543; questions@azypusa.com; www.azypusa.com



Mobile Phase Solvents

These CSPs can be used in any type of organic solvents without any issue. However, switching to or from a normal phase condition to other mobile phases, please use ethanol or IPA as a transition solvent. Allow at least 10-20 column volumes of conditioning time before injection.

Screening Mobile Phases

Polar Ionic Mode: 100/0.2 wt% MeOH/ammonium formate or
100/0.1/0.1 MeOH/acetic acid (AA)/triethylamine (TEA)
Polar Organic: 60/40/0.3/0.2 ACN/MeOH/AA/TEA
Reversed Phase: 30/70 MeOH/20 mM ammonium acetate (pH 4.5) buffer
Normal Phase: 30/70 EtOH/Hexane (or Heptane) (**neutral molecules only**)

Optimizations

Polar Ionic Mode: Change concentration of salts between 0.02 wt% and 1 wt%
Change different ammonium salts:
 Use ammonium formate or ammonium trifluoroacetate
Change the ratio of AA/TEA between 3/1 and 1/3

Polar Organic: Change ACN/MeOH ratio
Change AA/TEA ratio between 3/1 and 1/3

Reversed Phase: Change organic/buffer ratio
Change different organic solvents
Change pHs for ionizable compounds:
 Usually, pH 3-4.5 for bases and pH 5.5-7 for acids
Change different salts:
 Use ammonium formate or ammonium nitrate

Normal Phase: Change ratio of alcohol to alkanes
Change different type of alcohols

Flow Rate: Change the flow rate according to the retention time

Temperature: Change the column temperatures between 5-45 °C

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- Storage** Pure MeOH or Ethanol is recommended for long term storage.
- Regeneration** Flush the column with 50/50, ACN/50 mM NH₄OAc @ lower flow rates for at least 2 hours. Then flush with pure methanol.
- Shipment** Each column has been QC-tested before shipping. The columns are stored in pure methanol.