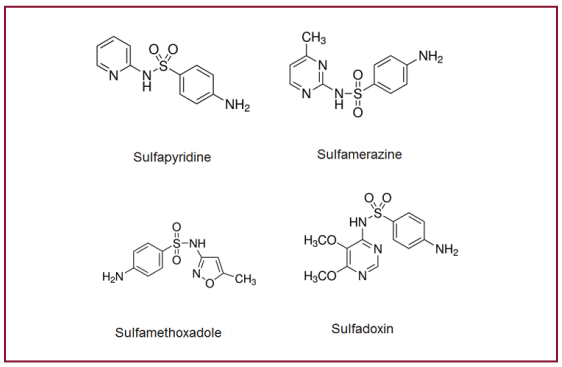
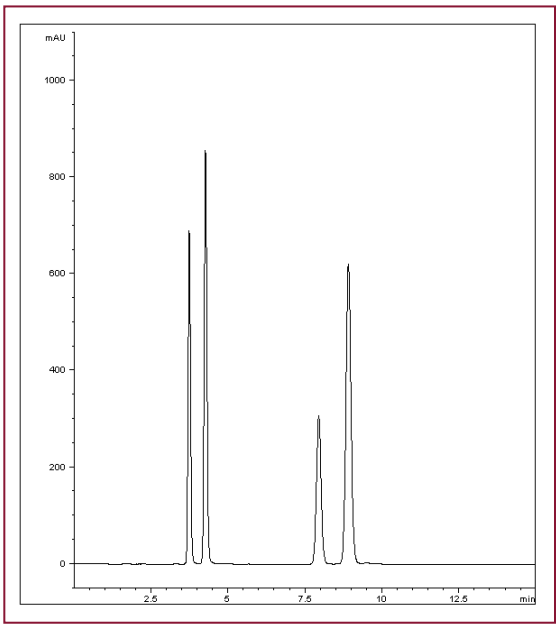
Sulfonamide Antibiotics

Everyday reliable precision on the Cogent RP Phenyl Hexyl





Notes: Introduced in the 1930's, sulfonamide drugs paved the drug pathway as an antibiotic revolution in medicine. They were the first broadly effective antibacterials to be used systemically. Sulfonamides inhibit Dihydropteroate synthase (DHPS), an enzyme that is an essential nutrient and is critical for the synthesis of folate. Where mammals acquire folate from their diet, bacteria must synthesize this vitamin. Folate synthesis requires a chemical reaction between 2 molecules, DHPP and PABA, that is catalyzed by DHPS. Sulfonamides inhibit DHPS by binding to the active site. Once bacteria developed resistance, they were replaced by penicillin. Researchers found the bacteria resistant to sulfa drugs often have mutations in the DHPS enzyme.

Method Conditions

Column: Cogent RP Phenyl Hexyl™, 5µm, 100Å

Catalog No.: 68539-15P

Dimensions: 4.6 x 150 mm

Mobile Phase: A: DI H_2O/ 0.1% formic acid
B: Acetonitrile/ 0.1% formic acid

Isocratic: 25% B

Injection vol.: 5µL

Flow rate: 1.0 mL/min

Detection: 270 nm

Diluent: Acetonitrile and water (50:50)

Mixture: 0.25 mg/mL of each analyte

Peaks: 1. Sulfapyridine
2. Sulfamerazine
3. Sulfamethoxadole
4. Sulfadoxin

Discussion

This straightforward method demonstrates excellent separation and peak efficiency when used on the Cogent RP Phenyl Hexyl. As shown in the chromatogram, the peak symmetry is outstanding and great resolution is exhibited analyzing these four similar sulfa drugs. This Cogent RP demonstrates another great alternative column for easy plug and play methods.

PRODUCED BY:
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