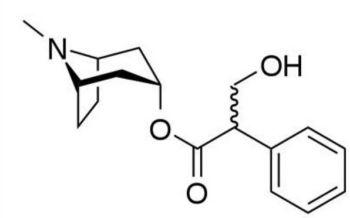
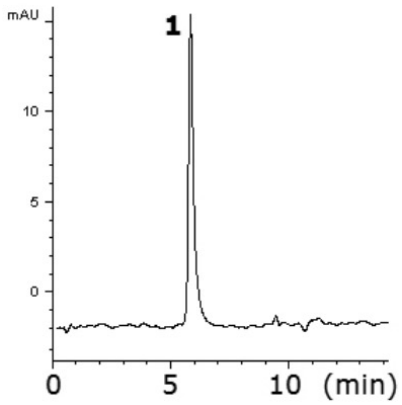
Determination of Atropine

Rugged and Fast Without Paired Ions



Atropine



Note: Being potentially deadly, Atropine derives its name from Atropos, one of the three Fates who, according to Greek mythology, chose how a person was to die. Atropine is a core medicine in the World Health Organization's "Essential Drugs List", which is a list of minimum medical needs for a basic health care system.

Method Conditions

Column: **Cogent UDC-Cholesterol™**, 4µm, 100Å

Catalog No.: 69069-15P

Dimensions: 4.6 x 150 mm

Mobile Phase: 80% A/ 20% B isocratic run

Solvents: A: DI H_2O + 0.1% acetic acid + 0.005% TFA
B: Acetonitrile + 0.1% acetic acid + 0.005% TFA

Injection vol.: 1µL

Flow rate: 1 mL/min

Detection: UV 214 nm

Sample: Prepared in 50% solution A/ 50% solution B, concentration 1 mg/mL
Sample was filtered through a 0.45µm nylon membrane HPLC filter prior to HPLC-UV injections (MicroSolv Technology Corp.)

Peak: Atropine (RT = 5.94 min)

Discussion

Ion-pair chromatography (IPC) is commonly used in order to retain atropine on ordinary Type-A and Type-B reversed phase HPLC columns. Beside long equilibration times with these columns, IPC often suffers from poor robustness. The aim of this study was to develop a robust and simple HPLC method for testing of atropine. Using a Cogent UDC-Cholesterol column and an isocratic elution with flow rate 1 mL/min gave symmetrical peak for this tropane alkaloid.

The method presented is simple, accurate and reproducible. The sensitivity is sufficient for the proper determination of atropine in plasma after intravenous administration of the drug to hospitalized patients. This method is also useful for testing for drug poisoning and for stability testing of atropine solutions during manufacturing. The linear range of detection for atropine was around 5.0µg/mL with a limit of quantification (LOQ) 10.0µg/mL.

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