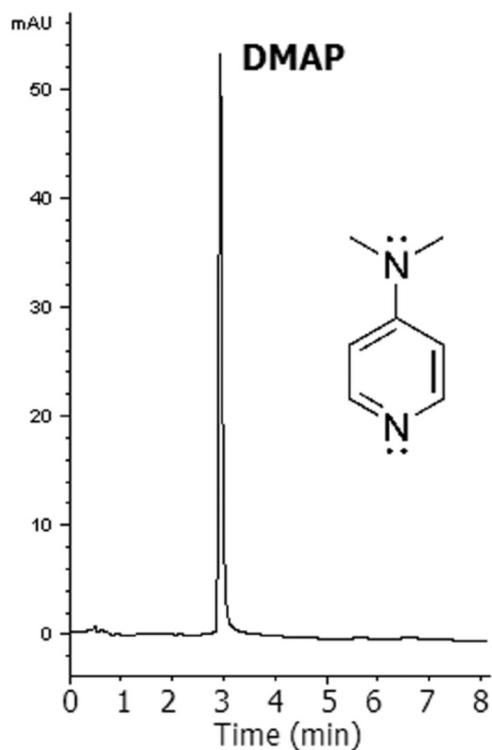


Analyzing the Catalyst DMAP

4-Dimethylaminopyridine by HPLC



Method Conditions

Column: Cogent Diamond Hydride™, 4µm, 100Å

Catalog No.: 70000-7.5P

Dimensions: 4.6 x 75 mm

Solvents: A: DI H₂O/ 0.05% TFA
B: Acetonitrile

Mobile Phase: 90%A/ 10%B (isocratic)

Injection vol.: 10µL

Flow rate: 2.0 mL/min

Detection: UV 280 nm

Sample: 1 mg/mL prepared in 50%A/ 50%B

Peak: DMAP (4-Dimethylaminopyridine)

Discussion

A rapid, reliable, isocratic reverse phase HPLC method was developed for the analysis of an important catalyst to many industries: 4-Dimethylaminopyridine (DMAP).

Notes: DMAP is an important catalyst to many industries including the pharmaceutical industry which uses it to synthesize many new drugs. It is used in picolinyl derivatization (esterification with picolinic acid) of steroids for LC-MS-MS analysis; the ethyl ether-picolinyl derivatization provides an approximately 10-fold higher ESI response in the positive-LC-ESI-MS/MS (selected reaction monitoring; SRM) when compared to that of underivatized steroid molecules. Pre-column derivatization of T-2 and HT-2 toxins (Fusarium mycotoxins that can occur in cereals and cereal-based products) with fluorescent labeling reagents is carried out in toluene with DMAP as a catalyst. 4-dimethylaminopyridine is also used in accelerated synthesis of heroin from morphine. In comparison with classic acetylating procedures, reaction time is reduced from several hours at elevated temperatures to <10min at room temperature when DMAP is used as a catalyst.