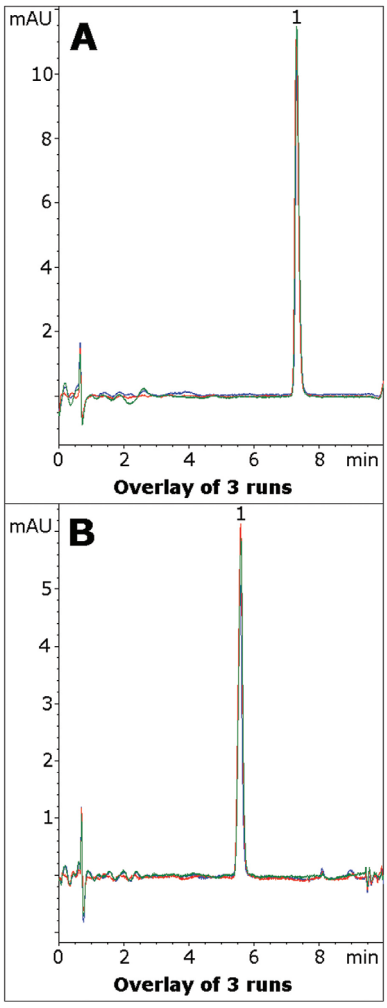
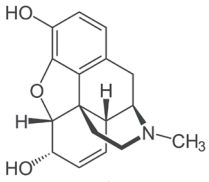
Morphine Sulfate Tablet Method Transfer

Standard 4µm particle size to 2.ō™





Morphine

Note: Morphine is a highly potent opiate analgesic widely used in clinical applications to treat severe pain. However, tolerance and addiction develop rapidly with its use so it has potential for abuse as well. It is named after Morpheus, the Greek god of dreams.

Method Conditions

Column: Fig. A: Cogent Diamond Hydride 2.ō™, 120Å
Fig. B: Cogent Diamond Hydride™, 4µm, 100Å

Catalog No.: Fig. A: 70200-05P-2; **Fig. B:** 70000-05P-3

Dimensions: Fig. A: 2.1 x 50 mm; **Fig. B:** 3.0 x 50 mm

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

Gradient:

time (min.)	%B
0	90
0.4	90
7.4	40
8.4	90

Post time: 5 min

Injection vol.: 0.2 microL

Flow rate: Fig. A: 0.29mL/min; **Fig. B:** 0.50mL/min

Detection: UV 284 nm

Sample: 15mg strength morphine sulfate tablet was ground and weighed in a 25mL volumetric flask. A portion of 50/50 solvent A/solvent B diluent was added and the flask was sonicated 10 min. It was then diluted to mark and filtered with a 0.45µm nylon syringe filter (MicroSolv Tech Corp.).

Peak: 1. Morphine sulfate

t_0: 0.4 min

Discussion

This application illustrates how methods developed using the 4µm Cogent Diamond Hydride columns may be adapted for Cogent Diamond Hydride 2.ō phases. Morphine shows slightly higher retention on the 2.ō column (average 7.311 min vs. 5.588 min). The efficiency is almost twice as high when using the smaller particle sized column, demonstrating the excellent benefits of this option.

Three runs were performed on each column in order to demonstrate consistency.

MANUFACTURED BY:
MICROSOLV TECHNOLOGY CORPORATION
9158 Industrial Blvd NE
Leland, NC 28451
p: 1.732.380.8900
f: 1.910.769.9435
customers@mtc-usa.com
www.Cogent-HPLC.com