

Synthetic Corticosteroids

Waters Corporation



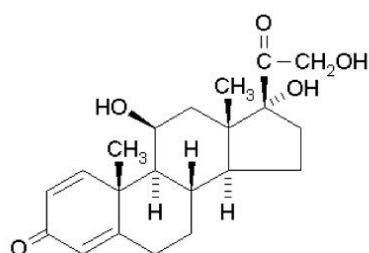
This is an Application Brief and does not contain a detailed Experimental section.

Abstract

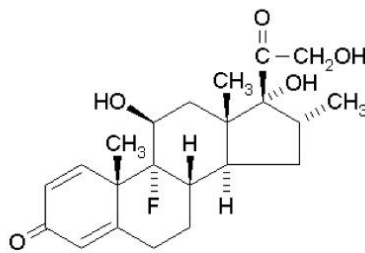
This application brief highlights the analysis of synthetic corticosteroids.

Introduction

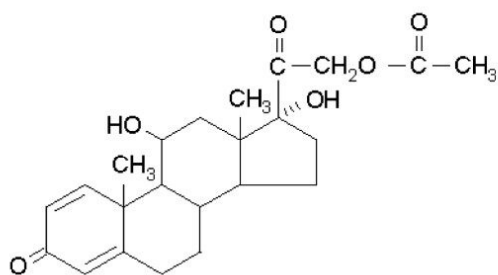
Corticosteroids have potent anti-inflammatory properties, and are used in a wide variety of inflammatory conditions such as arthritis, colitis, asthma, bronchitis, certain skin rashes, and allergic or inflammatory conditions of the nose and eyes.



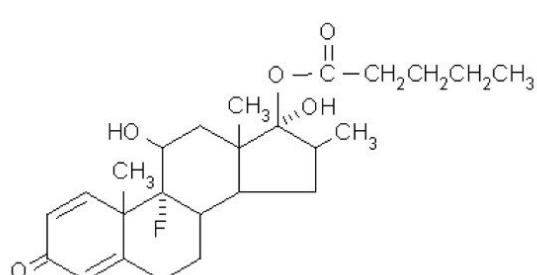
Prednisolone



Dexamethasone



Prednisolone 21-acetate



Betamethasone 17-valerate

Experimental

Conditions

Column:

SunFire C₈ 4.6 x 150 mm, 5 μm

Part number:

186002737

Mobile phase A: Water

Mobile phase B: Acetonitrile

Flow rate: 1 mL/min

Injection volume: 10 μ L

Sample concentration: 20 μ g/mL in water; 1 mg/mL stock solution prepared in acetonitrile

Temperature: 30 $^{\circ}$ C

Detection: UV @ 254 nm

Instrument: Alliance 2695 with 2996 PDA

Isocratic Gradient

| Time (min) | Profile | |
|------------|---------|----|
| | %A | %B |
| 0.0 | 50 | 50 |
| 12.0 | 50 | 50 |

Compounds

Column: SunFire C₈ 4.6 x 100 mm, 3.5 μ m

Part number: 186002731

Mobile phase A: Water

Mobile phase B: Acetonitrile

Flow rate: 1 mL/min

Injection volume: 10 µL

Sample concentration: 20 µg/mL in water; 1 mg/mL stock solution prepared in acetonitrile

Temperature: 30 °C

Detection: UV @ 254 nm

Instrument: Alliance 2695 with 2996 PDA

Isocratic Gradient

| Time (min) | Profile | |
|------------|---------|----|
| | %A | %B |
| 0.0 | 50 | 50 |
| 12.0 | 50 | 50 |

Results and Discussion

| | |
|---------------|-------------|
| Compounds | USP Tailing |
| Prednisolone | 1.46 |
| Dexamethasone | 1.34 |

Compounds USP Tailing

Prednisolone 21-
acetate 1.32

Betamethasone 1.1
17-valerate

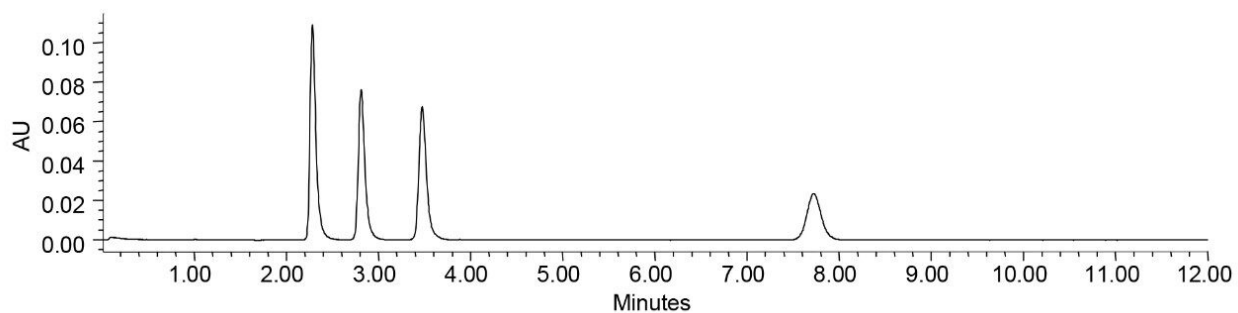
Compounds USP Tailing

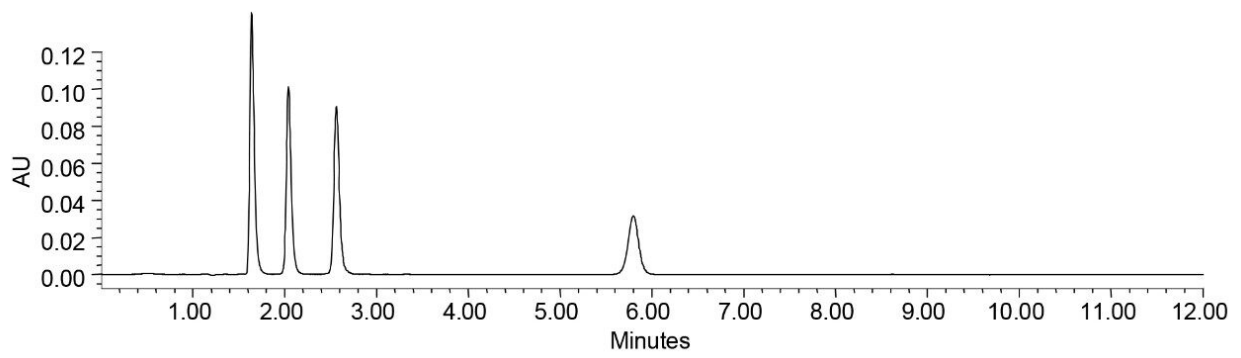
Prednisolone 1.41

Dexamethasone 1.31

Prednisolone 21-
acetate 1.22

Betamethasone 1
17-valerate





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