

Clopidogrel Analyzed with HPLC – AppNote

LCMS Compatible Separation of API from Degradants

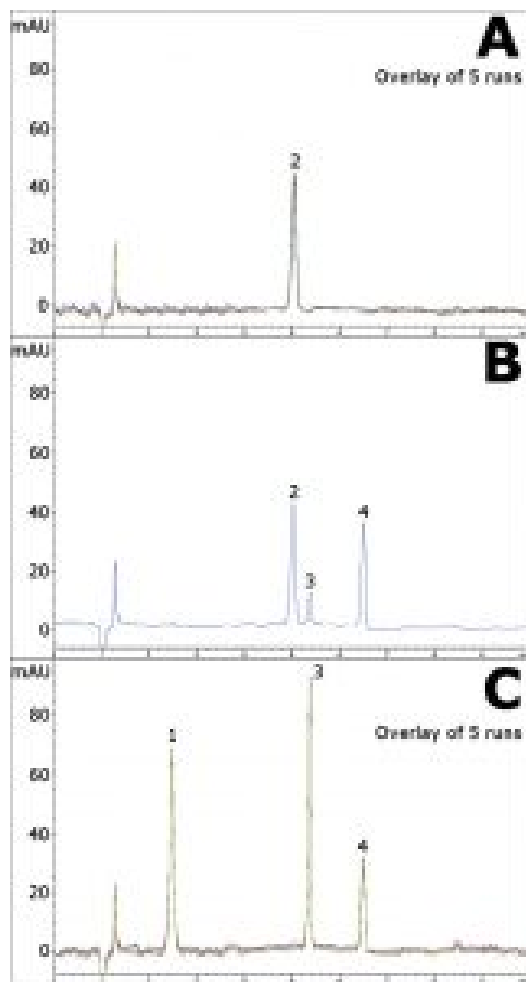
Although Clopidogrel, commonly known as Plavix, retains well in Reversed Phase, its Degradants showed low Retention even at high water content. Therefore this Method the compounds are retained on the basis of polarity. This Method uses MS compatible Solvents and provides good Retention and separation between the API and three observed Degradants.

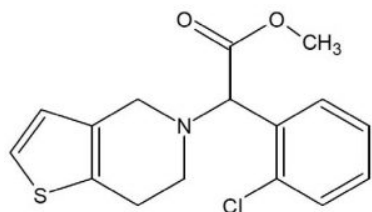
Figures

A: Non-Degraded extract: The stock solution was diluted 1:10 with 50:50 Solvent A / Solvent B mixture. Only the API Peak is observed.

B: Base Degradation: The stock solution was diluted 1:10 with 50:50 1N NaOH / Acetonitrile mixture. Two Degradants are now present.

C: Base Degradation with heating: The stock solution was diluted 1:10 with 50:50 1N NaOH / Acetonitrile mixture and then heated at 85°C for 30 minutes. The API Peak is no longer observed but a third Degradant (Peak 1) is now present.





Peak:

1. Degradant
2. Clopidogrel (API)
3. Degradant
4. Degradant

Method Conditions

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

Catalog No.: 70000-7.5P

Dimensions: 4.6 x 75mm

Mobile Phase:

A: DI Water / 0.1% Formic Acid (v/v)

B: Acetonitrile / 0.1% Formic Acid (v/v)

Gradient:



Time (minutes)	%B
0	95
2	95
7	60
8	95

Post time: 2 minutes

Injection vol.: 1µL

Flow rate: 1.0mL / minute

Detection: UV @ 225nm

Sample Preparation: 50mg strength Plavix® tablet was ground and diluted in 50:50 Solvent A / Solvent B mixture to 50mL. The solution was sonicated and filtered through a 0.45µm Nylon Syringe Filter (MicroSolv Tech Corp.).

t₀: 0.9 minutes

Note: Clopidogrel is an antiplatelet agent used to inhibit blood clots, sold under the trade name Plavix.



Attachment

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