

Tricyclic Antidepressant: HPLC Analysis of Doxepin in 'Aponal 100' Tablets Application

Basic Research

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Doxepin is a tricyclic antidepressant derivative of diphenylamine. Tricyclic antidepressants have parasympatholytic side effects, which occur a few days after treatment. The desired antidepressant effects occur after 2 or 3 weeks. Figure 1 shows an overlaid chromatogram of doxepin standard and the extract from 'Aponal 100' tablets. The autosampler temperature was set to 4 °C to avoid decomposition of the samples. The analysis was done with an Eclipse XDB-C18 column, an extra densely bonded C18 column made with special Zorbax silica support and designed to reduce or eliminate strong adsorption of basic or acidic compounds.

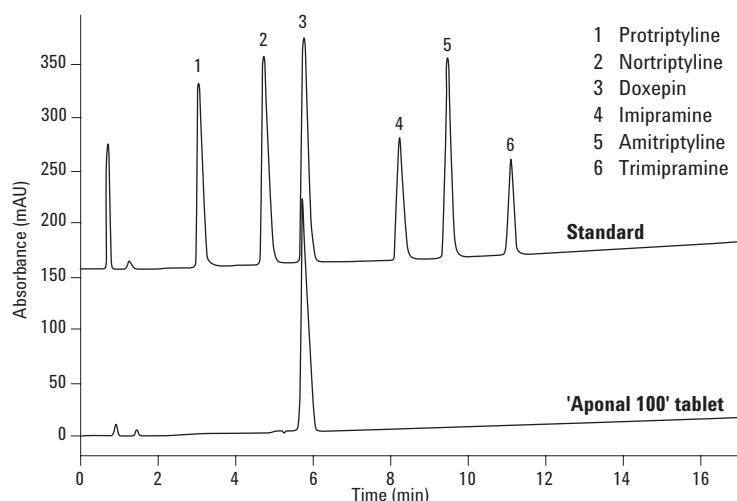
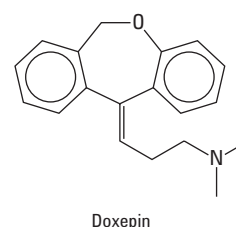


Figure 1. Analysis of doxepin in 'Aponal 100' tablet.

Highlights

- The extra densely bonded Eclipse XDB-C18 provides excellent peak shape for a basic biogenic amine due to more complete coverage of the silica surface.
- The Eclipse XDB-C18 shows excellent and rapid resolution of tricyclic aromatic amines at neutral pH and low buffer concentration.
- The Eclipse XDB-C18 is very stable at neutral pH.
- Doxepin is separated from 'Aponal 100' tablets with no interference from excipients.
- Doxepin is accurately identified by retention comparison with a standard.



Experimental Conditions

Equipment: Agilent 1100 Series HPLC; **Column:** Zorbax Eclipse XDB, 3.5 μ m, 4.6 \times 75 mm (part number 966967-902), Guard cartridges: Eclipse XDB-C18, 5 μ m, 4.0 \times 4.0 mm (part number 7995118-504); **Mobile phase:** A = 0.025 M KH_2PO_4 in water (pH = 7), B = methanol; **Injection volume:** 5 μ L; **Temp:** 25 °C; **Flow rate:** 1.0 mL/min; **Gradient:** at 0 min 67% B, at 15 min 85% B; **Column wash:** at 17 min 67% B; **UV Detector:** Variable wavelength detector, 210 nm, standard cell; **Stop time:** 17 min; **Post time:** 10 min



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