

Propranolol in plasma

Limit of Detection* : 5 ng/ml, (19.3 nM)

Application note Ref : AN 067

Propranolol (PROP) is a non-cardioselective beta-blocker which is commonly used in the treatment of hypertension and angina. Because PROP is extensively metabolized by the liver, plasma concentrations, and therefore the pharmacological effect will differ depending on patient metabolism and/or drug interactions. The toxicity of the drug can be correlated with its concentration in plasma and rapid quantitation with a robust methodology is required. Analysis of propranolol in plasma was performed by capillary electrophoresis (CE) with native laser-induced fluorescence (LIF) detection at 266 nm to provide a very low limit of detection.

Limit of Detection* : 5 ng/mL, i.e., 19.3 nM

* Estimated for a S/N of 3

	CE-LIF	CE-ESI-MS
LOD	5 ng/ml	20 ng/ml

Instruments :

Capillary electrophoresis : Agilent CE

Detector : Picometrics ZETALIF detector
Laser : DPSS Laser 266 nm, 2 mW

Sample : Propranolol and MDA (internal standard) in human plasma

Sample preparation : protein precipitation with acetonitrile (2:1, v/v)

Reagents : None (naturally fluorescent compounds)

Methods : Capillary : 50 µm ID, 33.5 cm effective length

Buffer : tris-phosphate 25 mM (ionic strength) pH 2.8

Injection : 40 mbar, 12 s (estimated injected volume = 16 nL)

Voltage : 30 kV

Rise time : 0.5 s

PMT : 650 V

For complete experimental details, please contact Picometrics

Figure 1 : CE-LIF 266nm electropherogram of propranolol (PROP) and internal standard (I.S.) in plasma

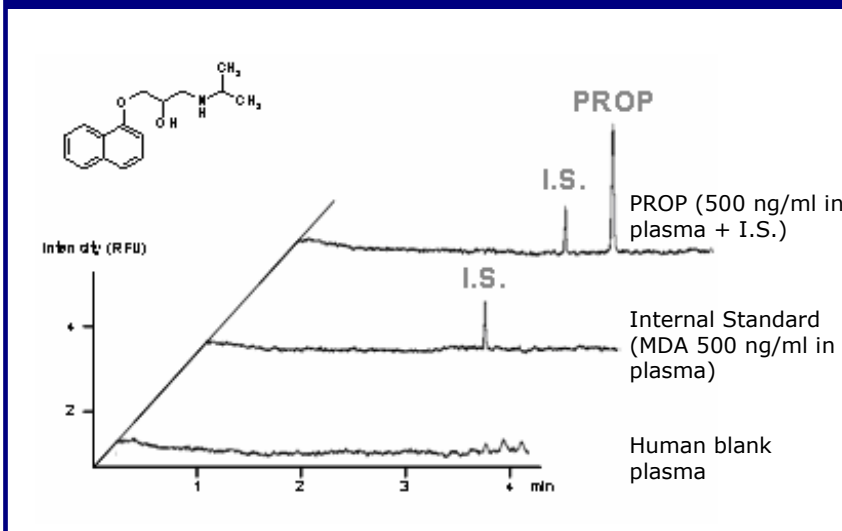
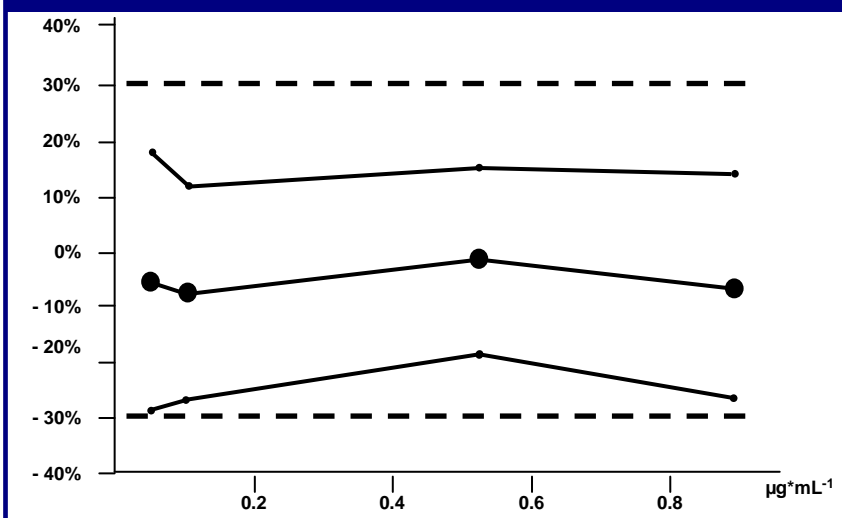


Figure 2 : Validation of propranolol in plasma: accuracy profile (●—●) with α=5%.

Quantitative performance are included within 30% tolerated limits (----)



Source and acknowledgment:

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