

Supporting Information

J. Chem. Metrol. X:X (202X) XX-XX

RP-HPLC method combined with ultrafiltration for simultaneous analysis of Melphalan and Topotecan in human plasma samples

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Table S1: The physicochemical properties of melphalan and topotecan

	Melphalan	Topotecan
Molecular Formula	C ₁₃ H ₁₈ Cl ₂ N ₂ O ₂	C ₂₃ H ₂₃ N ₃ O ₅
Molecular Weight	305.20	421.4
Form	Crystals	Amorphous
Melting Point	180 °C	213-218 °C
Solubility	Water 1.7 - 2.3 (mg/mL) Methanol 2.8 - 5.6 (mg/mL)	In water, 2,350 mg/L at 25 °C (est)
Vapor Pressure	3.0X10 ⁻¹⁰ mm Hg at 25 °C (est)	3.52X10 ⁻¹⁸ mm Hg at 25 °C (est)
LogP	-0.52	0.8
Stability	Sensitive to light, heat, and moisture.	Stable under recommended storage conditions.
Dissociation Constants	pKa = 4.3 (carboxy), pKa = 6.5 (primary amine), pKa = 12.3 (tertiary amine) (est)	pKa1 = 1.74 (imine); pKa2 = 8.00 (benzyl alcohol); pKa3 = 9.83 (amine) (est)