Trace quantification of 1-octacosanol and 1-triacontanol and their main metabolites in plasma by liquid-liquid extraction coupled with gas chromatography-mass spectrometry

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A method for the simultaneous determination of 1-octacosanol and 1-triacontanol and their main metabolites in rat plasma was developed. The procedure involved ethanolic NaOH saponification of the sample, acidification, liquid-liquid extraction, and derivatization of the analytes to its trimethylsilylether/ester, followed analysis by gas chromatography-mass spectrometry (GC-MS) in selected ion monitoring (SIM) mode. Quantification was performed by the internal standard method using betulin. The method had a good linearity over the range 8.4-540 ng/ml (r ? 0.998) and showed an excellent intra-day (R.S.D. = 0.59-3.06%) and inter-day (R.S.D. = 2.99-5.22%) precision according to the acceptance criteria. The detection limits ranged between 1.32 and 3.47 ng/ml. The method was applied successfully to study the total plasmatic concentration of 1-octacosanol, octacosanoic acid, 1-triacontanol, and triacontanoic acid, after an oral dose of policosanols mixture, using plasma samples of 100 ?l. © 2