

PT11 Separation of Isobaric Anthracyclines by Travelling Wave Ion Mobility Mass Spectrometry

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Several pairs of isobaric anthracycline compounds were successfully separated by IMS.

Anthracyclines exert their antitumour effects by binding to tumour DNA by intercalation [1]. Sugars attached to the ring system (aglycone) of anthracyclines are also important for biological activity [2]. Cosmomycin D (CosD) has an unusual glycosylation pattern in that it contains two trisaccharide chains [3].

Cultures of *Streptomyces olindensis* ICB20 that had originally produced CosD as the major anthracycline mutated over time to produce cultures that synthesised many different related anthracycline molecules. CosD and related molecules are of interest for their potential anticancer properties. Anthracyclines from mutant cultures were characterised by determination of exact mass and elemental composition using an ESI Q-TOF MS. MSⁿ (n = 2-5) experiments enabled determination of the sugar sequences and partial characterisation of the aglycone. Isobaric anthracycline molecules were successfully separated using a Waters SynaptTM HDMS mass spectrometer.

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