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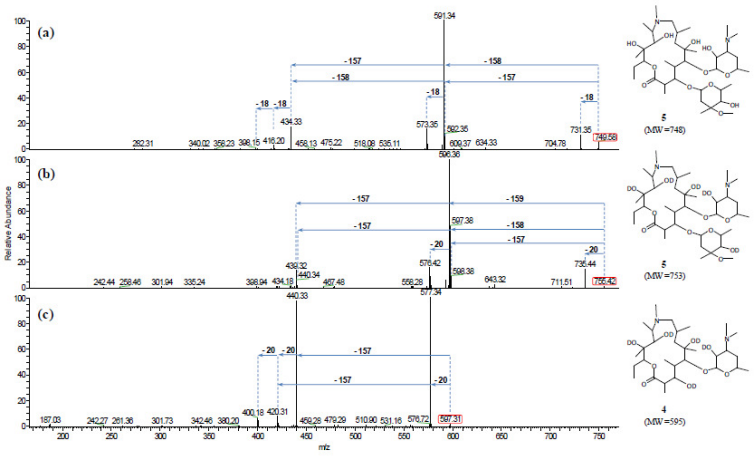
Fragmentation Study Using H/D Exchange and ESI-MS^n to Facilitate Structural Elucidation of Novel Macrocycles

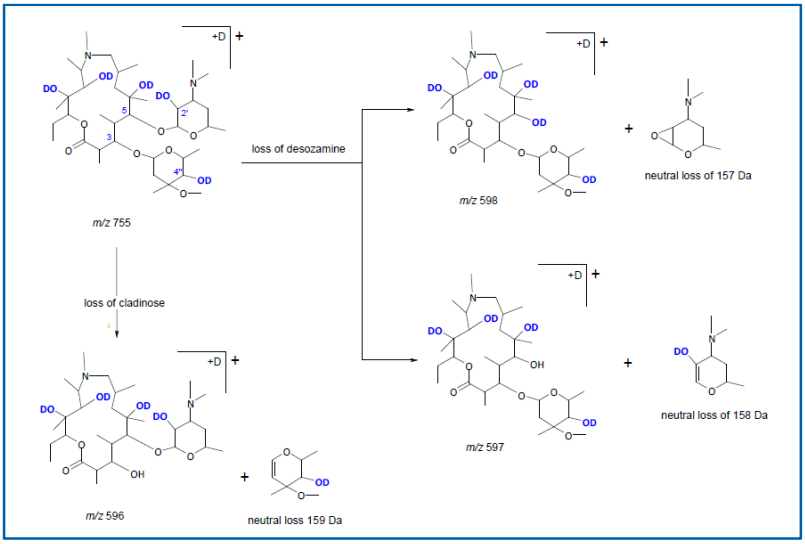
Objective

- Detailed fragmentation study of azithromycin aglycone and its derivatives by means of ESI-MS^n and H/D exchange – detailed understanding of fragmentation pathways of different 15-membered azalides
- H/D exchange experiments - insight into fragmentation routes of analysed compounds
- Comparison of fragmentation patterns of macrocyclic $[M+H]^+$ ions and sodium adduct ions $[M+Na]^+$ -influence of an alkali metal interacting with the aglycone ring on the product-ion spectra



- The synthesis of new macrolide antibiotics involving structural modifications of azithromycin leads to novel classes of compounds. New chemical series were based on an aglycone ring as a core structure.
- Understanding the fragmentation of the different structural modifications of 15-membered azalides enables easier structure elucidations of newly synthesised compounds, proces impurities, related substances and degradation products.
- Comprehensive fragmentation study on azithromycin and it's analogues using ESI-MS^n and H/D exchange on both $[M+H]^+$ and $[M+Na]^+$ gave insight characteristic fragments.

- Characteristic elimination of sugars from azithromycin in deuterated solvent gave ions at *m/z* 596, 597 and 598.
- The most intense signal at *m/z* 596 corresponded to the elimination of cladinose sugar moiety.
- The elimination of desosamine sugar from compound azithromycin gave two ions with signals at *m/z* 597 and *m/z* 598.
- Possible structures representing the elimination of sugars from azithromycin in deuterated solvent are given in scheme.



References:

1. D. Gembarovski et al, *J. Pharm. Biomed. Anal.* 86 (2013) 1–10
2. M. Matanovic Skugor at al, *Bioorg. Med. Chem.* 18 (2010) 6547–6558
3. Z. Marusic Istuk et al, *Bioorg. Med. Chem.* 19 (2011) 556–566
4. M. Bukvic Krajacic et al, *Eur. J. Med. Chem* 52 (2007) 138–145
5. Pesic et al, *Eur. J. Med. Chem* 49 (2012) 335-378

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