Electronic Supplementary Material (ESI) for New Journal of Chemistry.

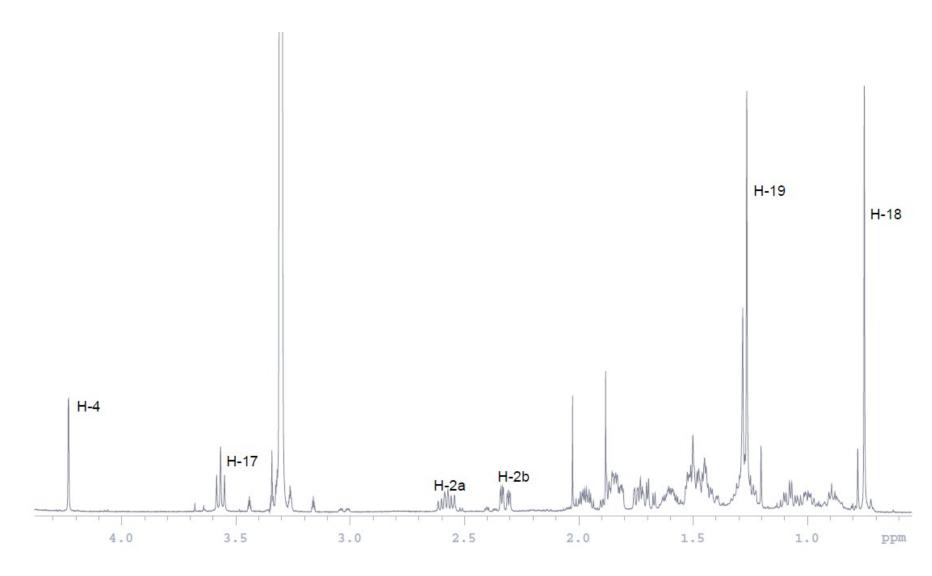
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New Journal of Chemistry - Supplementary data

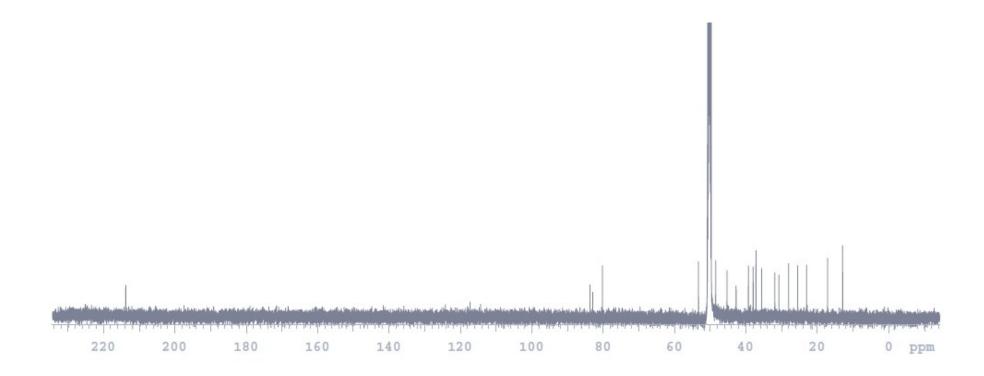
## Oxidation of testosterone by permanganate and its implication in sports drug testing

Unnikrishnan Kuzhiumparambil, Shimpei Watanabe, Shanlin Fu

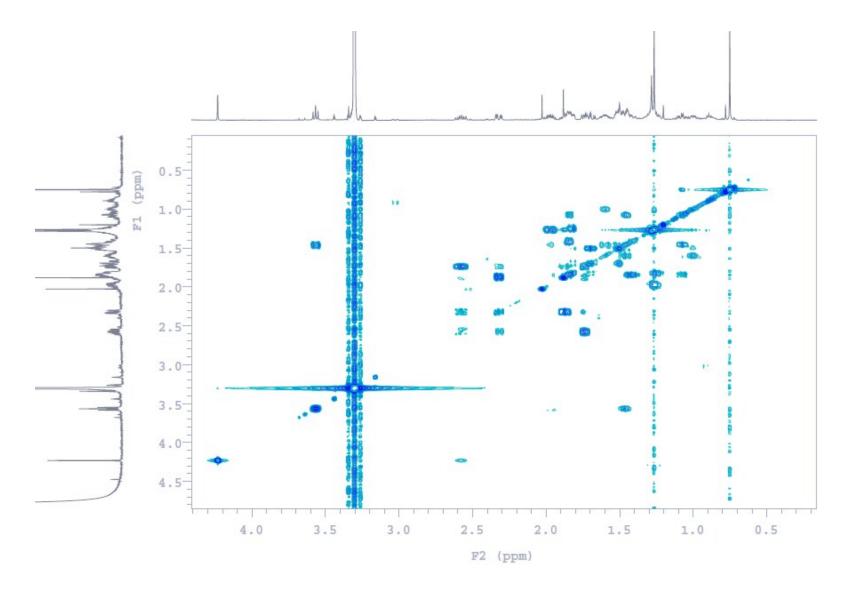
Centre for Forensic Science, School of Chemistry and Forensic Science, University of Technology, Sydney (UTS), Australia



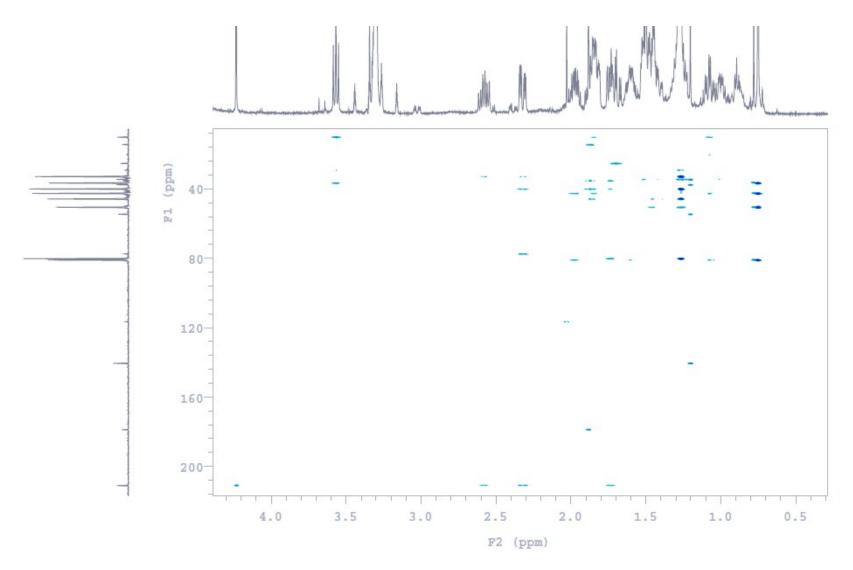
<sup>1</sup>H NMR spectrum of 4α,5α-Dihydroxytestosterone (P1)



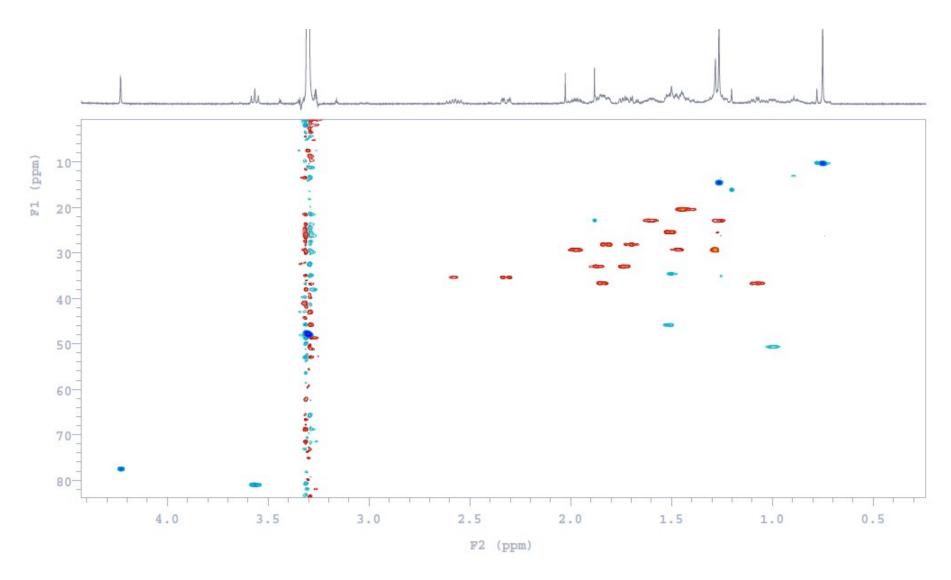
 $^{13}$ C NMR spectrum of  $4\alpha$ ,  $5\alpha$ -Dihydroxytestosterone (P1)



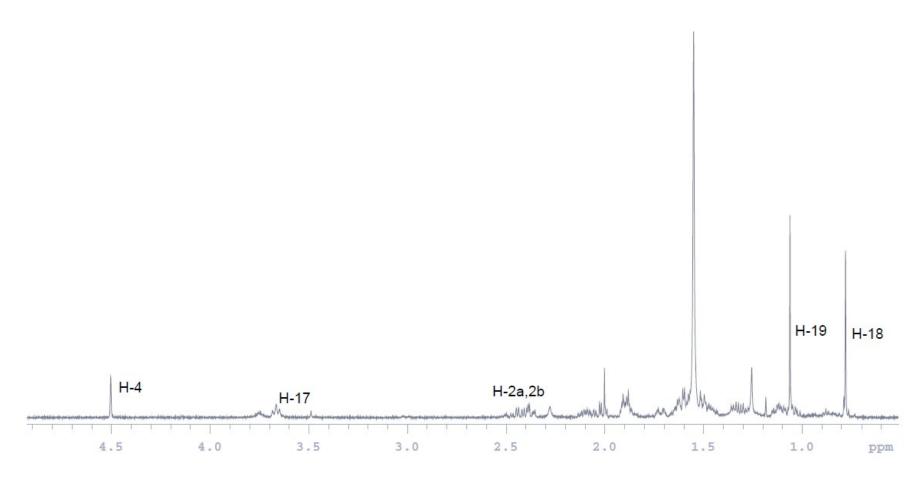
COSY spectrum of 4α,5α-Dihydroxytestosterone (P1)



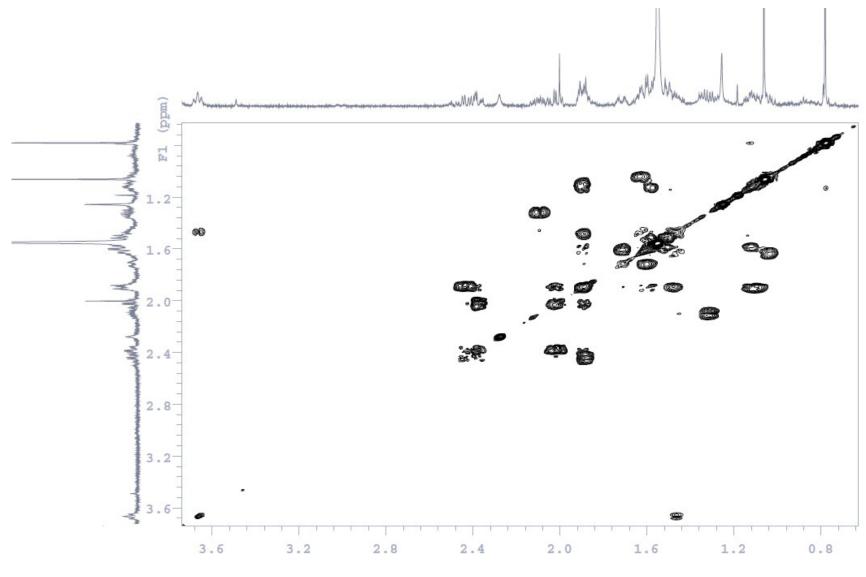
HMBC spectrum of  $4\alpha$ ,  $5\alpha$ -Dihydroxytestosterone (P1)



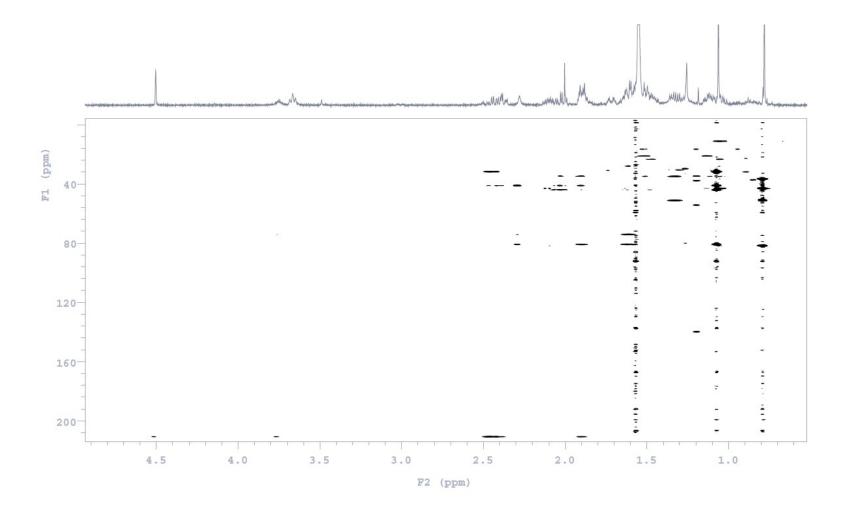
HSQC spectrum of 4α,5α-Dihydroxytestosterone (P1)



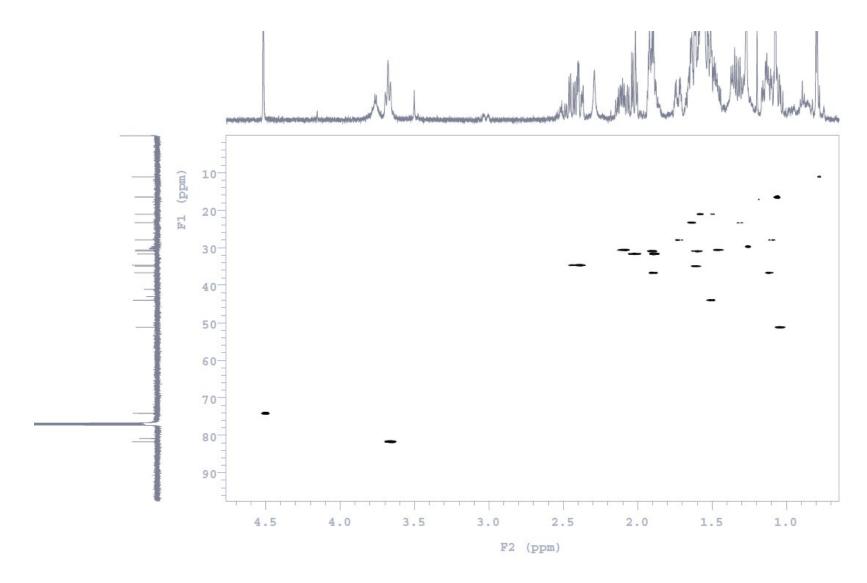
 $^{1}$ H NMR spectrum of  $4\beta$ ,  $5\beta$ -Dihydroxytestosterone (P2)



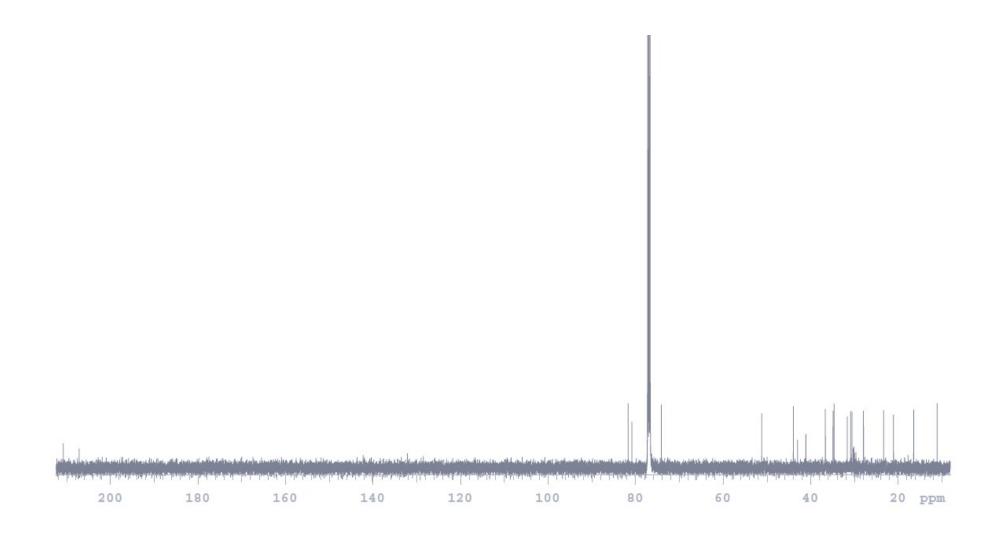
COSY spectrum of  $4\beta$ ,  $5\beta$ -Dihydroxytestosterone (P2)



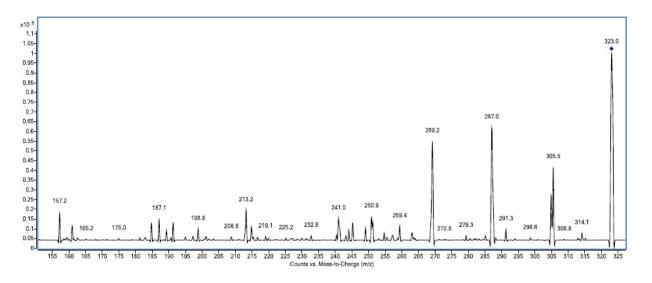
HMBC spectrum of  $4\beta$ ,  $5\beta$ -Dihydroxytestosterone (P2)



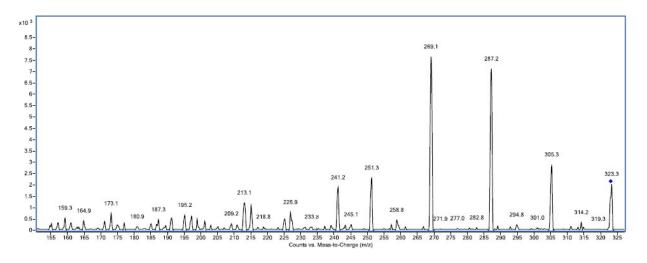
HSQC NMR spectrum of  $4\beta$ ,  $5\beta$ -Dihydroxytestosterone (P2)



 $^{13}$ C NMR spectrum of  $4\beta$ ,  $5\beta$ -Dihydroxytestosterone (P2)



Product ion spectrum of  $4\alpha$ ,  $5\alpha$ -Dihydroxytestosterone (P1)



Product ion spectrum of  $4\beta$ ,  $5\beta$ -Dihydroxytestosterone (P2)