

Quality Control of Heparin by NMR Analysis

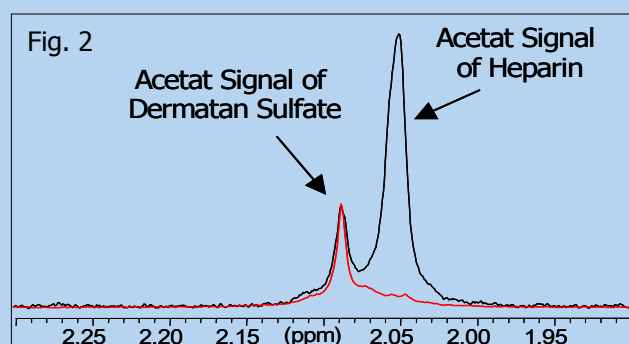
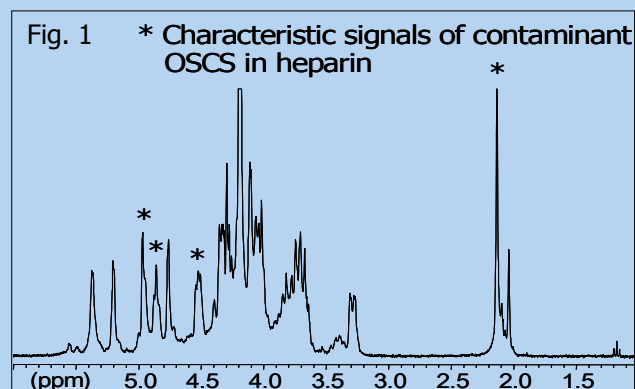
I Background

NMR spectroscopy is the recommended method for identification and quality control of heparin sodium and calcium in order to identify contaminants and impurities (e.g. Oversulfated Chondroitin sulfate, OSCS).

Ph.Eur. monograph on Heparin Sodium

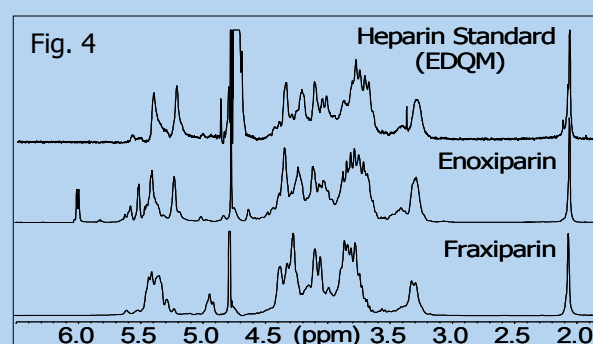
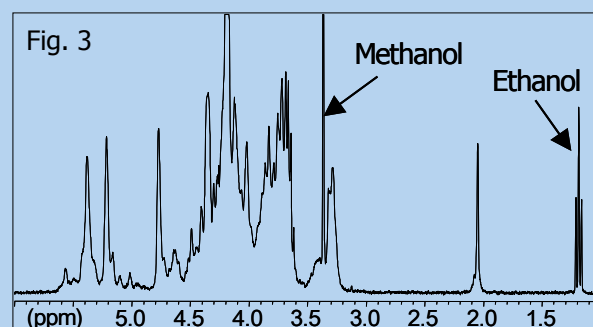
08/2008:0333 (revised August 2008)

USP monograph on Heparin Sodium, Pharmacopeial Forum (VOL. 35(5) [Sept.-Oct. 2009]).



I Our Service

- Identification and Quantification of OSCS in heparin API, in LMW heparins as well as in finished products by ^1H -NMR analysis (Fig.1)
- Quantification of Dermatan Sulfate in incompletely fractionated heparin (Fig. 2)
- Detection of solvent residues, like ethanol, methanol, DMF, etc. (Fig 3)
- Quality control of LMW heparins, e.g. Enoxiparin, Dalteparin, Fraxiparin by ^{13}C -NMR according to Pharmacopoeia 5.0/0828 (Fig. 4)



I Your Advantage

- Reliable and fast **Identification and Impurity Control** for your heparin by one single NMR analysis.
- Results available **within 48 hours** after arriving of sample.
- All services are applied under full **GMP or GLP requirements**.