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**Analysis of heparin sodium by SAX/HPLC for contaminants and impurities**

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#	Paper	IF	Citations
71	Orthogonal analytical approaches to detect potential contaminants in heparin. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2009</b> , 106, 16956-61	11.5	84
70	Identification of a simple and sensitive microplate method for the detection of oversulfated chondroitin sulfate in heparin products. <i>Analytical Biochemistry</i> , <b>2009</b> , 388, 317-21	3.1	26
69	Characterization of heparin impurities with HPLC-NMR using weak anion exchange chromatography. <i>Analytical Chemistry</i> , <b>2009</b> , 81, 10116-23	7.8	25
68	[Capillary electrophoresis analysis of contaminants in heparin sodium for the Japanese pharmacopoeia purity test]. <i>Yakugaku Zasshi</i> , <b>2009</b> , 129, 1255-64	0	11
67	Analysis of crude heparin by (1)H NMR, capillary electrophoresis, and strong-anion-exchange-HPLC for contamination by over sulfated chondroitin sulfate. <i>Journal of Pharmaceutical and Biomedical Analysis</i> , <b>2010</b> , 51, 921-6	3.5	53
66	Quantitative NMR spectroscopy of biologically active substances and excipients. <i>Bioanalytical Reviews</i> , <b>2010</b> , 2, 1-22	1	36
65	Heparin identification test and purity test for OSCS in heparin sodium and heparin calcium by weak anion-exchange high-performance liquid chromatography. <i>Biologicals</i> , <b>2010</b> , 38, 539-43	1.8	14
64	Novel and highly sensitive mixed-polymeric electrokinetic chromatography system for determination of contaminants and impurities of heparin samples. <i>Electrophoresis</i> , <b>2010</b> , 31, 3606-12	3.6	5
63	Assay of possible economically motivated additives or native impurities levels in heparin by 1H NMR, SAX-HPLC, and anticoagulation time approaches. <i>Journal of Pharmaceutical and Biomedical Analysis</i> , <b>2010</b> , 52, 656-64	3.5	38
62	Bradykinin forming capacity of oversulfated chondroitin sulfate contaminated heparin in vitro. <i>Biomaterials</i> , <b>2010</b> , 31, 5741-8	15.6	27
61	Description of hypersensitivity adverse events following administration of heparin that was potentially contaminated with oversulfated chondroitin sulfate in early 2008. <i>Pharmacoepidemiology and Drug Safety</i> , <b>2010</b> , 19, 921-33	2.6	43
60	Reply to Oversulfated chondroitin sulfate is not the sole contaminant in heparin. <i>Nature Biotechnology</i> , <b>2010</b> , 28, 207-211	44.5	24
59	Sensitive detection of oversulfated chondroitin sulfate in heparin sodium or crude heparin with a colorimetric microplate based assay. <i>Analytical Chemistry</i> , <b>2011</b> , 83, 3422-30	7.8	34
58	Class modeling analysis of heparin 1H NMR spectral data using the soft independent modeling of class analogy and unequal class modeling techniques. <i>Analytical Chemistry</i> , <b>2011</b> , 83, 1030-9	7.8	21
57	Competitive inhibition of heparinase by persulfonated glycosaminoglycans: a tool to detect heparin contamination. <i>Analytical Chemistry</i> , <b>2011</b> , 83, 7815-22	7.8	16
56	Highly sensitive potentiometric strip test for detecting high charge density impurities in heparin. <i>Analytical Chemistry</i> , <b>2011</b> , 83, 3957-62	7.8	19
55	The use of SAX-HPLC-CD as a heparin screening strategy. <i>Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences</i> , <b>2011</b> , 879, 2619-23	3.2	8

54	Simple fluorescence assay for quantification of OSCS in heparin. <i>Analytical and Bioanalytical Chemistry</i> , <b>2011</b> , 399, 673-80	4.4	19
53	Characterization of currently marketed heparin products: key tests for quality assurance. <i>Analytical and Bioanalytical Chemistry</i> , <b>2011</b> , 399, 581-91	4.4	34
52	Analysis and characterization of heparin impurities. <i>Analytical and Bioanalytical Chemistry</i> , <b>2011</b> , 399, 527-39	4.4	84
51	Comparison of established and novel purity tests for the quality control of heparin by means of a set of 177 heparin samples. <i>Analytical and Bioanalytical Chemistry</i> , <b>2011</b> , 399, 605-20	4.4	33
50	NMR of heparin API: investigation of unidentified signals in the USP-specified range of 2.12-3.00 ppm. <i>Analytical and Bioanalytical Chemistry</i> , <b>2011</b> , 399, 651-62	4.4	8
49	Determination of galactosamine impurities in heparin samples by multivariate regression analysis of their <sup>1</sup> H NMR spectra. <i>Analytical and Bioanalytical Chemistry</i> , <b>2011</b> , 399, 635-49	4.4	22
48	The use of circular dichroism as a simple heparin-screening strategy. <i>Analytical and Bioanalytical Chemistry</i> , <b>2011</b> , 399, 701-6	4.4	12
47	The development of an FIA-CD strategy for screening sulfated polysaccharides using antimalarial drugs and related species as probes. <i>Analytical and Bioanalytical Chemistry</i> , <b>2011</b> , 399, 707-16	4.4	2
46	Identification of heparin samples that contain impurities or contaminants by chemometric pattern recognition analysis of proton NMR spectral data. <i>Analytical and Bioanalytical Chemistry</i> , <b>2011</b> , 401, 939-44	4.4	24
45	Linear polyalkylamines as fingerprinting agents in capillary electrophoresis of low-molecular-weight heparins and glycosaminoglycans. <i>Electrophoresis</i> , <b>2011</b> , 32, 3070-7	3.6	3
44	Mass balance analysis of contaminated heparin product. <i>Analytical Biochemistry</i> , <b>2011</b> , 408, 147-56	3.1	8
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41	HPLC-MS/MS of Highly Polar Compounds. <b>2012</b> ,		1
40	Detection of native chondroitin sulfate impurities in heparin sodium with a colorimetric micro-plate based assay. <i>Analytical Methods</i> , <b>2012</b> , 4, 1488	3.2	7
39	Characterization of currently marketed heparin products: key tests for LMWH quality assurance. <i>Journal of Pharmaceutical and Biomedical Analysis</i> , <b>2013</b> , 85, 99-107	3.5	25
38	Forced degradation and impurity profiling: recent trends in analytical perspectives. <i>Journal of Pharmaceutical and Biomedical Analysis</i> , <b>2013</b> , 86, 11-35	3.5	98
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36	Determination of heparin based on the reaction with Co(II)/5-Cl-PADAB complex using the resonance Rayleigh scattering technology. <i>Analytical Methods</i> , <b>2013</b> , 5, 2511	3.2	5
35	High-throughput differentiation of heparin from other glycosaminoglycans by pyrolysis mass spectrometry. <i>Analytical Chemistry</i> , <b>2013</b> , 85, 7405-12	7.8	18
34	Determination of galactosamine impurities in heparin sodium using fluorescent labeling and conventional high-performance liquid chromatography. <i>Biologicals</i> , <b>2013</b> , 41, 355-63	1.8	
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31	Development and validation of an ion-exchange chromatography method for heparin and its impurities in heparin products. <i>Journal of Separation Science</i> , <b>2014</b> , 37, 3195-204	3.4	9
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29	A nanosensor for ultrasensitive detection of oversulfated chondroitin sulfate contaminant in heparin. <i>Journal of the American Chemical Society</i> , <b>2014</b> , 136, 554-7	16.4	45
28	Development and validation of a simple and sensitive size-exclusion chromatography method for quantitative determination of heparin in pharmaceuticals. <i>Acta Pharmaceutica</i> , <b>2015</b> , 65, 43-52	3.2	4
27	Highly sensitive determination of dialkyl phosphinate acids in environmental samples by ion chromatography tandem mass spectrometry. <i>Journal of Chromatography A</i> , <b>2015</b> , 1394, 26-35	4.5	3
26	Molecular Beacon-Based Fluorescent Assay for Specific Detection of Oversulfated Chondroitin Sulfate Contaminants in Heparin without Enzyme Treatment. <i>Analytical Chemistry</i> , <b>2015</b> , 87, 5031-5	7.8	18
25	Reversible Electrochemical Sensor for Detection of High-Charge Density Polyanion Contaminants in Heparin. <i>Analytical Chemistry</i> , <b>2015</b> , 87, 11537-43	7.8	19
24	Synthesis and detection of N-sulfonated oversulfated chondroitin sulfate in marketplace heparin. <i>Analytical Biochemistry</i> , <b>2015</b> , 490, 52-4	3.1	4
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