

Key HDX-MS Publications for Pharma & BioPharma

Key peer-reviewed publications

Comparative higher-order structure analysis of antibody biosimilars using combined bottom-up and top-down hydrogen-deuterium exchange mass spectrometry

Jingxi Pan, Suping Zhang, Christoph H. Borchers, Biochimica et Biophysica Acta 1864 (2016) 1801–1808

Fast Comparative Structural Characterization of Intact Therapeutic Antibodies Using Hydrogen–Deuterium Exchange and Electron Transfer Dissociation

Jingxi Pan, Suping Zhang, Albert Chou, Darryl B. Hardie, and Christoph H. Borchers, Anal. Chem., 2015, 87 (12), pp 5884–5890

Identification of Bexarotene as a PPAR γ Antagonist with HDX

Marciano, David P.; Kuruville, Dana S.; Pascal, Bruce D.; Griffin, Patrick R., PPAR Research, Volume 2015 (2015)

Effect of Fc-Glycan Structure on the Conformational Stability of IgG Revealed by Hydrogen/Deuterium Exchange and Limited Proteolysis

Jing Fang, Jason Richardson, Zhimei Du and Zhongqi Zhang. Biochemistry, 2016, Feb 16;55(6), 860–8.

Structural and Functional Characterization of a Hole–Hole Homodimer Variant in a “Knob-Into-Hole” Bispecific Antibody

Hui-Min Zhang et al., Anal. Chem. 2017, 89, 13494–13501

Two-Site Evaluation of the Repeatability and Precision of an Automated Dual-Column Hydrogen/Deuterium Exchange Mass Spectrometry Platform

David J. Cummins, et al., Analytical Chemistry 2016 88 (12), 6607-6614

Useful Reviews

Review: Protein Folding—How and Why: By Hydrogen Exchange, Fragment Separation, and Mass Spectrometry

S. Walter Englander, Leland Mayne, Zhong-Yuan Kan, and Wenbing Hu, Annu. Rev. Biophys. 2016.45:135-152.

Review: HDX-MS guided drug discovery: small molecules and biopharmaceuticals

David P Marciano, Venkatasubramanian Dharmarajan and Patrick R Griffin, Current Opinion in Structural Biology 2014, 28:105–111

Review: An overview of hydrogen deuterium exchange mass spectrometry (HDX-MS) in drug discovery

Glenn R. Masson, Meredith L. Jenkins & John E. Burke, Expert Opinion on Drug Discovery, 2017, 12:10, 981-994

Science Supplement

Accelerating the path from structure to function through integrative structural biology solutions - Science 2017

Applications & Posters

Optimizing Electron Transfer Dissociation Conditions for Hydrogen/Deuterium Exchange Mass Spectrometry and Its Application to the Study of Protein Conformation - ASMS 2017 Poster

Evaluation of different Hydrogen/Deuterium Exchange data processing software by looking at conformational changes induced by mAb aggregation - CASS 2016 Poster Note

Characterization of Conformation of Therapeutic Antibody Aggregation with Optimized Hydrogen/Deuterium Exchange Mass Spectrometer - ASMS 2016 Poster Note

Characterization of the Conformation of Therapeutic Antibody Oxidation Variants with Optimized Hydrogen/Deuterium Exchange Mass Spectrometry - AAPS 2015 Poster Note

Optimization of a Fully Automated Hydrogen/Deuterium Exchange Mass Spectrometry Platform for Probe Protein Conformation/Conformation Dynamics - ASMS 2015 Poster

Brochure

Higher Order Protein Structure Elucidation by HDX-MS

Webinar

SGS Webinar - Application of HDX-MS for drug discovery and development

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