

Mass spectrometry

# MS-based protein footprinting publications

## Featuring Thermo Scientific™ Orbitrap Fusion™ Tribrid™ Mass Spectrometers

### Validated determination of NRG1 Ig-like domain structure by mass spectrometry coupled with computational modeling

Niloofar Abolhasani Khaje, Alexander Eletsky, Sarah E. Biehn, Charles K. Mobley, Monique J. Rogals, Yoonkyoo Kim, Sushil K. Mishra, Robert J. Doerksen, Steffen Lindert, James H. Prestegard, and Joshua S. Sharp

*Commun Biol.* 2022 May 12;5(1):452

<https://www.nature.com/articles/s42003-022-03411-y>

### Cryo-EM reveals the architecture of placental malaria VAR2CSA and provides molecular insight into chondroitin sulfate binding

Kaituo Wang, Robert Dagil, Thomas Lavstsen, Sandeep K. Misra, Charlotte B. Spliid, Yong Wang, Tobias Gustavsson, Daniel R. Sandoval, Elena Ethel Vidal-Calvo, Swati Choudhary, Mette Ø Agerbaek, Kresten Lindorff-Larsen, Morten A. Nielsen, Thor G. Theander, Joshua S. Sharp, Thomas Mandel Clausen, Pontus Gourdon, and Ali Salanti

*Nat Commun.* 2021 May 19;12(1):2956

<https://www.nature.com/articles/s41467-021-23254-1>

### Allosteric regulation of lysosomal enzyme recognition by the cation-independent mannose 6-phosphate receptor

Linda J. Olson, Sandeep K. Misra, Mayumi Ishihara, Kevin P. Battaile, Oliver C. Grant, Amika Sood, Robert J. Woods, Jung-Ja P. Kim, Michael Tiemeyer, Gang Ren, Joshua S. Sharp, and Nancy M. Dahms

*Commun Biol.* 2020 Sep 9;3(1):498

<https://www.nature.com/articles/s42003-020-01211-w>

### Quantitative protein topography measurements by high resolution hydroxyl radical protein footprinting enable accurate molecular model selection

Boer Xie, Amika Sood, Robert J. Woods, and Joshua S. Sharp

*Sci Rep.* 2017 Jul 3;7(1):4552

<https://www.nature.com/articles/s41598-017-04689-3>

### Towards high-throughput fast photochemical oxidation of proteins: quantifying exposure in high fluence microtiter plate photolysis

Mohammad Riaz, Sandeep K. Misra, and Joshua S. Sharp

*Anal Biochem.* 2018 Nov 15;561-562:32-36

<https://www.sciencedirect.com/science/article/pii/S0003269718307437>

**Self-organized amphiphiles are poor hydroxyl radical scavengers in fast photochemical oxidation of proteins experiments**

Zhi Cheng, Charles Mobley, Sandeep K. Misra, Rama S. Gadepalli, Rachel I. Hammond, Leonid S. Brown, John M. Rimoldi, and Joshua S. Sharp

*J Am Soc Mass Spectrom.* 2021 May 5;32(5):1155-1161

<https://pubs.acs.org/doi/10.1021/jasms.0c00457>

**Flash oxidation (FOX) system: a novel laser-free fast photochemical oxidation protein footprinting platform**

Joshua S. Sharp, Emily E. Chea, Sandeep K. Misra, Ron Orlando, Marla Popov, Robert W. Egan, David Holman, and Scot R. Weinberger

*J Am Soc Mass Spectrom.* 2021 Jul 7;32(7):1601-1609

<https://pubs.acs.org/doi/10.1021/jasms.0c00471>

**Inline liquid chromatography–fast photochemical oxidation of proteins for targeted structural analysis of conformationally heterogeneous mixtures**

Surendar Tadi, Sandeep K. Misra, and Joshua S. Sharp

*Anal Chem.* 2021 Feb 23;93(7):3510-3516.

<https://pubs.acs.org/doi/abs/10.1021/acs.analchem.0c04872>

**Rapid quantification of peptide oxidation isomers from complex mixtures**

Niloofer Abolhasani Khaje, and Joshua S. Sharp

*Immunity.* 2023 Jul 11;56(7):1681-1698.e13

<https://pubs.acs.org/doi/10.1021/acs.analchem.9b05268>

**Intrinsic buffer hydroxyl radical dosimetry using tris(hydroxymethyl)aminomethane**

Addison E. Roush, Mohammad Riaz, Sandeep K. Misra, Scot R. Weinberger, and Joshua S. Sharp

*J Am Soc Mass Spectrom.* 2020 Feb 5;31(2):169-172

<https://pubs.acs.org/doi/10.1021/jasms.9b00088>

**Long-range conformational changes in monoclonal antibodies revealed using FPOP-LC-MS/MS**

Owen Cornwell, Nicholas J. Bond, Sheena E. Radford, and Alison E. Ashcroft

*Anal Chem.* 2019 Dec 3;91(23):15163-15170

<https://pubs.acs.org/doi/10.1021/acs.analchem.9b03958>

**Real time normalization of fast photochemical oxidation of proteins experiments by inline adenine radical dosimetry**

Joshua S. Sharp, Sandeep K. Misra, Jeffrey J. Persoff, Robert W. Egan, and Scot R. Weinberger

*Anal Chem.* 2018 Nov 6;90(21):12625-12630

<https://pubs.acs.org/doi/10.1021/acs.analchem.8b02787>

**Variation in FPOP measurements is primarily caused by poor peptide signal intensity**

Niloofer Abolhasani Khaje, Charles K. Mobley, Sandeep K. Misra, Lindsey Miller, Zixuan Li, Evgeny Nudler, and Joshua S. Sharp

*J Am Soc Mass Spectrom.* 2018 Sep;29(9):1901-1907

<https://pubs.acs.org/doi/10.1007/s13361-018-1994-y>

**Compensated hydroxyl radical protein footprinting measures buffer and excipient effects on conformation and aggregation in an adalimumab biosimilar**

Sandeep K. Misra, Ron Orlando, Scot R. Weinberger, and Joshua S. Sharp

*AAPS J.* 2019 Jul 11;21(5):87

<https://link.springer.com/article/10.1208/s12248-019-0358-2>

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