

BIOGRAPHICAL SKETCH

NAME: Claudio Iacobucci

POSITION TITLE: RTDB (assistant professor) in CHIM/06 – Organic Chemistry

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
Università degli Studi dell'Aquila	Bachelor's and degrees	09/2012	01/2016	Chemistry
Università degli Studi dell'Aquila	Master's degree	09/2012	01/2016	Chemistry
Università degli Studi dell'Aquila	PhD	09/2012	01/2016	Chemical Sciences
Università degli Studi dell'Aquila	Postdoc	06/2016	09/2016	Reaction Mechanism
Université de Bretagne Occidentale	Postdoc	02/2016	09/2016	Reaction Mechanism
Martin-Luther-Universität Halle- Wittenberg	Postdoc	09/2016	06/2019	Structural Proteomics
Chiesi Pharmaceuticals	Postdoc	06/2019	09/2021	Structural Proteomics
University of L'Aquila	RTDB	02/2022	today	Chemical proteomics

A. Personal Statement

My research is centered on the chemical modification of proteins, with a particular emphasis on the development and application of chemical cross-linkers. Leveraging my extensive experience in mass spectrometry, I am committed to advancing our understanding of the structures of proteins, protein complexes, and drug-protein interactions.

B. Positions, Scientific Appointments and Honors

[2023 - 2026] PRIN 2022 grant

[2023 - 2026] PRIN 2022 PNRR grant

[2022 - 2024] Board Member and Treasurer of the Italian Society for Mass Spectrometry (IMaSS).

[2021 - 2023] Scientific Writer, Martin-Luther-Universität Halle-Wittenberg.

[2019 - 2021] Individual Fellowships - Marie Skłodowska-Curie Actions

[2018] Scientific Consultant, Chiesi Pharmaceuticals.

[2016 - 2019] Individual Humboldt Research Fellowship.

[Since 2014] Member of the Young Experts Group of the ECTN (European Chemistry Thematic Network) Label Committee

C. Contributions to Science

- Di Ianni, A., Ihling, C. H., Vranka, T., Matousek, V., Sinz, A., & Iacobucci, C.** (2024). Evaluating Imide-Based Mass Spectrometry-Cleavable Cross-Linkers for Structural Proteomics Studies. *JACS Au*. DOI: <https://doi.org/10.1021/jacsau.4c00282>
- Rojas Echeverri, J. C., Hause, F., Iacobucci, C., Ihling, C. H., Tanzler, D., Shulman, N., Riffle, M., MacLean, B. X., & Sinz, A.** (2024). A Workflow for Improved Analysis of Cross-Linking Mass Spectrometry Data Integrating Parallel Accumulation-Serial Fragmentation with MeroX and Skyline. *Analytical Chemistry*, 96(19), 7373--7379.
- Hassan, A. H., Ihling, C., Iacobucci, C., Kastritis, P. L., Sinz, A., & Kruse, T.** (2023). The structural principles underlying molybdenum insertase complex assembly. *Protein Science*, 32(9), e4753.

4. **Zanetti-Polzi, L., Daidone, I., Iacobucci, C., & Amadei, A.** (2023). Thermodynamic Evolution of a Metamorphic Protein: A Theoretical-Computational Study of Human Lymphotactin. *The Protein Journal*, 42(3), 219--228.
5. **Di Ianni, A., Tüting, C., Kipping, M., Ihling, C. H., Köppen, J., Iacobucci, C., Arlt, C., Kastritis, P. L., & Sinz, A.** (2023). Structural assessment of the full-length wild-type tumor suppressor protein p53 by mass spectrometry-guided computational modeling. *Scientific Reports*, 13(1), 8497.
6. **Ubbiali, D., Fratini, M., Piersimoni, L., Ihling, C. H., Kipping, M., Heilmann, I., Iacobucci, C., & Sinz, A.** (2022). Direct Observation of “Elongated” Conformational States in α -Synuclein upon Liquid-Liquid Phase Separation. *Angewandte Chemie*, 134(46), e202205726.
7. **Wei, A. A. J., Iacobucci, C., Schultze, W., Ihling, C. H., Arlt, C., & Sinz, A.** (2022). Different oligomeric states of the tumor suppressor p53 show identical binding behavior towards the S100 β homodimer. *Chembiochem*, 23(11), e202100665.
8. **Rehkamp, A., Tánzler, D., Tüting, C., Kastritis, P. L., Iacobucci, C., Ihling, C. H., Kipping, M., Koch, K.-W., & Sinz, A.** (2021). First 3D-Structural Data of Full-Length Guanylyl Cyclase 1 in Rod-Outer-Segment Preparations of Bovine Retina by Cross-Linking/Mass Spectrometry. *Journal of Molecular Biology*, 433(10), 166947.
9. **Niemeyer, M., Moreno Castillo, E., Ihling, C. H., Iacobucci, C., Wilde, V., Hellmuth, A., Hoehenwarter, W., Samodelov, S. L., Zurbriggen, M. D., Kastritis, P. L., & others.** (2021). Author Correction: Flexibility of intrinsically disordered degrons in AUX/IAA proteins reinforces auxin co-receptor assemblies. *Nature Communications*, 12(1), 1768.
10. **Ubbiali, D., Orlando, M., Kovačič, M., Iacobucci, C., Semrau, M. S., Bajc, G., Fortuna, S., Ilc, G., Medagli, B., Oloketuyi, S., & others.** (2021). An anti-HER2 nanobody binds to its antigen HER2 via two independent paratopes. *International Journal of Biological Macromolecules*, 182, 502--511.
11. **Hage, C., Iacobucci, C., Götze, M., & Sinz, A.** (2020). A biuret-derived, MS-cleavable cross-linking reagent for protein structural analysis: A proof-of-principle study. *Journal of Mass Spectrometry*, 55(1), e4449.
12. **Tüting, C., Iacobucci, C., Ihling, C. H., Kastritis, P. L., & Sinz, A.** (2020). Structural analysis of 70S ribosomes by cross-linking/mass spectrometry reveals conformational plasticity. *Scientific Reports*, 10(1), 12618.
13. **Iacobucci, C., Götze, M., & Sinz, A.** (2020). Cross-linking/mass spectrometry to get a closer view on protein interaction networks. *Current Opinion in Biotechnology*, 63, 48--53.
14. **Niemeyer, M., Moreno Castillo, E., Ihling, C. H., Iacobucci, C., Wilde, V., Hellmuth, A., Hoehenwarter, W., Samodelov, S. L., Zurbriggen, M. D., Kastritis, P. L., & others.** (2020). Flexibility of intrinsically disordered degrons in AUX/IAA proteins reinforces auxin co-receptor assemblies. *Nature Communications*, 11(1), 2277.
15. **Dal Cortivo, G., Marino, V., Iacobucci, C., Vallone, R., Arlt, C., Rehkamp, A., Sinz, A., & Dell’Orco, D.** (2019). Oligomeric state, hydrodynamic properties and target recognition of human Calcium and Integrin Binding protein 2 (CIB2). *Scientific Reports*, 9(1), 15058.
16. **Götze, M., Iacobucci, C., Ihling, C. H., & Sinz, A.** (2019). A simple cross-linking/mass spectrometry workflow for studying system-wide protein interactions. *Analytical Chemistry*, 91(15), 10236--10244.
17. **Iacobucci, C., Piotrowski, C., Aebersold, R., Amaral, B. C., Andrews, P., Bernfur, K., Borchers, C., Brodie, N. I., Bruce, J. E., Cao, Y., & others.** (2019). First community-wide, comparative cross-linking mass spectrometry study. *Analytical Chemistry*, 91(11), 6953--6961.
18. **Bellia, F., Lanza, V., García-Viñuales, S., Ahmed, I. M. M., Pietropaolo, A., Iacobucci, C., Malgieri, G., D’Abrosca, G., Fattorusso, R., Nicoletti, V. G., & others.** (2019). Ubiquitin binds the amyloid β peptide and interferes with its clearance pathways. *Chemical Science*, 10(9), 2732--2742.
19. **Ihling, C. H., Springorum, P., Iacobucci, C., Hage, C., Götze, M., Schäfer, M., & Sinz, A.** (2019). The isotope-labeled, MS-cleavable cross-linker disuccinimidyl dibutyric urea for improved cross-linking/mass spectrometry studies. *Journal of the American Society for Mass Spectrometry*, 31(2), 183--189.
20. **Le Poul, N., Colasson, B., Thiabaud, G., Fouque, D. J., Iacobucci, C., Memboeuf, A., Douziech, B., Řezáč, J., Prangé, T., de La Lande, A., & others.** (2018). Gating the electron transfer at a monocopper

centre through the supramolecular coordination of water molecules within a protein chamber mimic. *Chemical Science*, 9(43), 8282--8290.

21. **Iacobucci, C., Piotrowski, C., Rehkamp, A., Ihling, C. H., & Sinz, A.** (2018). The first MS-cleavable, photo-thiol-reactive cross-linker for protein structural studies. *Journal of the American Society for Mass Spectrometry*, 30(1), 139--148.
22. **Rehkamp, A., Tánzler, D., Iacobucci, C., Golbik, R. P., Ihling, C. H., & Sinz, A.** (2018). Molecular details of retinal guanylyl cyclase 1/GCAP-2 interaction.
23. **Iacobucci, C., Götze, M., Ihling, C. H., Piotrowski, C., Arlt, C., Schaefer, M., Hage, C., Schmidt, R., & Sinz, A.** (2018). A cross-linking/mass spectrometry workflow based on MS-cleavable cross-linkers and the MeroX software for studying protein structures and protein-protein interactions. *Nature Protocols*, 13(12), 2864--2889.
23. **Iacobucci, C., Reale, S., Aschi, M., Oomens, J., Berden, G., & De Angelis, F.** (2018). An Unprecedented Retro-Mumm Rearrangement Revealed by ESI-MS/MS, IRMPD Spectroscopy, and DFT Calculations. *Chemistry--A European Journal*, 24(27), 7026--7032.
24. **Iacobucci, C., Götze, M., Piotrowski, C., Arlt, C., Rehkamp, A., Ihling, C., Hage, C., & Sinz, A.** (2018). Carboxyl-photo-reactive MS-cleavable cross-linkers: unveiling a hidden aspect of diazirine-based reagents. *Analytical Chemistry*, 90(4), 2805--2809.
25. **Hage, C., Iacobucci, C., Rehkamp, A., Arlt, C., & Sinz, A.** (2017). The first zero-length mass spectrometry-cleavable cross-linker for protein structure analysis. *Angewandte Chemie International Edition*, 56(46), 14551--14555.
26. **Iacobucci, C., Sinz, A.** (2017). To be or not to be? Five guidelines to avoid misassignments in cross-linking/mass spectrometry. *Analytical Chemistry*, 89(15), 7832--7835.
27. **Iacobucci, C., Hage, C., Schäfer, M., & Sinz, A.** (2017). A novel MS-cleavable azo cross-linker for peptide structure analysis by free radical initiated peptide sequencing (FRIPS). *Journal of The American Society for Mass Spectrometry*, 28(10), 2039--2053.
28. **Iacobucci, C., Jouini, N., Massi, L., Olivero, S., De Angelis, F., Duñach, E., & Gal, J.-F.** (2017). Quantitative ligand affinity scales for metal triflate salts: application to isomer differentiation. *ChemPlusChem*, 82(3), 498--506.
29. **Iacobucci, C., Lebon, A., De Angelis, F., & Memboeuf, A.** (2016). CuAAC Click Reactions in the Gas Phase: Unveiling the Reactivity of Bis-Copper Intermediates. *Chemistry--A European Journal*, 22(52), 18690--18694.
30. **Cecchini, M. M., De Angelis, F., Iacobucci, C., Reale, S., & Crucianelli, M.** (2016). Mild catalytic oxidations of unsaturated fatty acid methyl esters (FAMES) by oxovanadium complexes. *Applied Catalysis A: General*, 517, 120--128.
31. **Iacobucci, C., Reale, S., & De Angelis, F.** (2016). Elusive reaction intermediates in solution explored by ESI-MS: Reverse periscope for mechanistic investigations. *Angewandte Chemie International Edition*, 55(9), 2980--2993.
32. **Tremel, P., Iacobucci, C., Massi, L., Olivero, S., Gal, J.-F., & Duñach, E.** (2015). Catalytic intramolecular carbonyl-ene reaction with ketones: evidence for a retro-ene process. *New Journal of Chemistry*, 39(9), 7453--7458.
33. **Iacobucci, C., Reale, S., Gal, J.-F., & De Angelis, F.** (2015). Dinuclear Copper Intermediates in Copper(I)-Catalyzed Azide-Alkyne Cycloaddition Directly Observed by Electrospray Ionization Mass Spectrometry. *Angewandte Chemie International Edition*, 54(10), 3065--3068.
34. **Iacobucci, C., Reale, S., Gal, J.-F., & De Angelis, F.** (2014). Insight into the mechanisms of the multicomponent Ugi and Ugi-Smiles reactions by ESI-MS(/MS). *European Journal of Organic Chemistry*, 2014(32), 7087--7090.
35. **Daidone, I., Iacobucci, C., McLain, S. E., & Smith, J. C.** (2012). Alteration of Water Structure by Peptide Clusters Revealed by Neutron Scattering in the Small-Angle Region (below 1 Å⁻¹). *Biophysical Journal*, 103(7), 1518--1524.
36. **Iacobucci, C., Reale, S., & De Angelis, F.** (2012). Photoactivable amino acid bioisosteres and mass spectrometry: snapshots of in vivo 3D protein structures. *Chembiochem: A European Journal of Chemical Biology*, 14(2), 181--183.

37. **Gal, J.-F., Iacobucci, C., Monfardini, I., Massi, L., Duñach, E., & Olivero, S.** (2012). A Quantitative Approach of the Interaction between Metal Triflates and Organic Ligands Using Electrospray Mass Spectrometry. *Journal of The American Society for Mass Spectrometry*, 23(12), 2059--2062.
38. **Gal, J.-F., Iacobucci, C., Monfardini, I., Massi, L., Duñach, E., & Olivero, S.** (2013). Metal triflates and triflimides as Lewis “superacids”: preparation, synthetic application and affinity tests by mass spectrometry. *Journal of Physical Organic Chemistry*, 26(2), 87--97.