

Ph.D. Fellowship Opportunity

Molecular mechanisms of pathogenic immune complex formation and novel enzymatic strategies for their elimination in autoimmune diseases

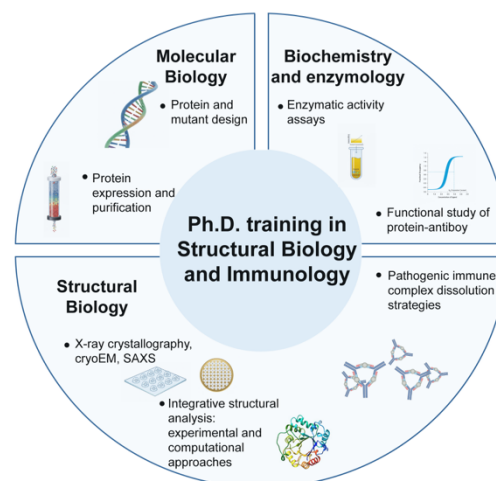
A research contract is offered to carry out a **PhD thesis at the Biobizkaia Health Research Institute, Spain.**

Applicants must hold a **degree in Biosciences** (Biology, Biomedical Sciences, Biotechnology, Biochemistry, Biophysics, Chemistry, Pharmacy, etc.), a **Master's degree, and show curiosity and a genuine interest in scientific research.** A strong academic record (average grade above 8/10), previous laboratory experience, and a good level of English will be positively valued.

The selected candidate will join **the Structural Glycoimmunology group led by Dr. Beatriz Trastoy.** The research project will focus on studying the **structure of complexes formed between bacterial enzymes and antibodies, as well as immune complexes associated with disease,** with the aim of designing new strategies to promote their dissolution. These studies will provide essential insights into the molecular mechanisms governing enzyme–antibody interactions and **open new possibilities for the treatment of autoimmune diseases.**

During the PhD, the candidate will have the opportunity to **learn and apply a wide range of cutting-edge experimental techniques,** including:

- **Molecular and cellular biology:** cloning, site-directed mutagenesis, expression and purification of recombinant proteins.
- **Biochemistry and enzymology:** enzymatic activity assays, functional characterization of protein–antibody complexes.
- **Structural biology:** protein and complex crystallization, X-ray crystallography, SAXS, and cryoelectron microscopy (cryoEM).
- **Novel therapeutic strategies** for the dissolution of pathogenic immune complexes.



Related publications from the group and collaborators:

- Márquez-Moñino M.Á. et al. *Molecular basis of Fab-dependent IgA antibody recognition by gut-bacterial metallopeptidases* (2025). *EMBO J.* 2025. DOI: 10.1038/s44318-025-00518-w
- Trastoy B. et al. *Mechanism of antibody-specific deglycosylation and immune evasion by Streptococcal IgG-specific endoglycosidases* (2023). *Nat. Commun.* 14:1705. DOI: 10.1038/s41467-023-37215-3
- Sastre D.E. et al. *The mechanistic basis for interprotomer deglycosylation of antibodies by corynebacterial IgG-specific endoglycosidases* (2025). *Nat. Commun.* 16:6147. DOI: 10.1038/s41467-025-60986-w

If you are interested, please send your CV and a motivation letter to beatriz.trastoy@gmail.com before September 30.

You can visit our website for more information: <https://glycoimmunology-lab.com>.

For any questions, please use the same email address