

**Goran Bajic, Ph.D.**  
**Assistant Professor of Microbiology**

**Laboratory Address:**  
Department of Microbiology  
Icahn School of Medicine at Mount Sinai  
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New York, NY 10029

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**Education**

2015 - 2020 **Postdoctoral**, Harvard Medical School, Boston, MA  
2012 - 2015 **Ph.D.** Structural Biology, Aarhus University, Denmark  
2009 - 2011 **M.Sc.** Structural and Functional Biochemistry, Université Claude Bernard Lyon 1, France  
2006 - 2009 **B.Sc.** Biochemistry, Université Claude Bernard Lyon 1, France

**Research Experience**

2020 - **Assistant Professor**  
Department of Microbiology  
Icahn School of Medicine at Mount Sinai, New York, NY

2019 - 2020 **Instructor in Pediatrics**  
Harvard Medical School, Boston, MA

2015 - 2019 **Postdoctoral Fellow** with Prof. Stephen C. Harrison  
Harvard Medical School and Boston Children's Hospital, Boston, MA  
*Structure-Function Analysis of Infection- and Vaccine-Induced B-cell Repertoire*

2013 - 2014 **Visiting Graduate Student** with Prof. Timothy A. Springer  
Harvard Medical School, Boston, MA  
*Expression and purification of  $\alpha\text{M}\beta\text{2}$  integrin head-piece for structural studies*

2012 - 2015 **Graduate Student** with Prof. Gregers R. Andersen  
Aarhus University, Denmark  
*Structural insight into the recognition of complement C3 activation products by integrin receptors*

2010 - 2011 **Master Student** with Dr. Laurent Terradot  
UMR 5086 CNRS Université de Lyon, France  
*Structural studies of DNA replication initiation in *Helicobacter pylori**

2008 - 2009 **Bachelor Student** with Dr. Nushin Aghajari  
UMR 5086 CNRS Université de Lyon, France  
*Structural and functional studies of L-arabinose isomerase from *Shewanella* sp. ANA-3*

2008 **Summer Intern** with Dr. Jean-Marc Dugua  
bioMérieux Ltd, Marcy l'Etoile, France  
*Purification and covalent coupling of monoclonal antibodies*

**Teaching Experience**

2019 **Teaching Fellow**  
Harvard University  
*Life Sciences 1a - Chemistry, Molecular Biology and Cell Biology*

2017 - 2019 **Teaching Fellow (head)**  
Harvard University Extension School  
*Immunology*

- 2017 - 2019 **Mentor in HHMI EXROP**  
Howard Hughes Medical Institute Exceptional Research Opportunities Program
- Fall 2017 **Invited Lecturer**  
Harvard Medical School; Master of Medical Sciences in Immunology program  
*Introduction to Protein Structure, Structural Biology of the Immune System, Structural Virology*
- Fall 2016 **Invited Lecturer**  
Harvard Medical School; Master of Medical Sciences in Immunology program  
*Structural Biology of the Immune System – Atomic view of the molecules involved and molecular visualization tools*
- 2012 – 2015 **Teaching Assistant**  
Aarhus University  
*Advanced Biochemistry, Physical Biochemistry and Advanced Molecular Biology*

### Awards and Honors

- 2020 **Guest editor** of a special issue for *Frontiers in Immunology*
- 2019 **Finalist** for the Michelson Prizes in Immunology - Human Vaccine Project
- 2019 **Travel award** from the American Society for Biochemistry and Molecular Biology to attend the annual meeting and present research (Orlando, FL)
- 2017 **Scholarship** from The National Institute of General Medical Sciences to attend The Cold Spring Harbor course on Antibody Engineering, Phage Display & Immune Repertoire Analysis
- 2017 **Finalist** for the Life Sciences Research Foundation Post-Doctoral Fellowship
- 2015 **Best poster award** at the 15th European Meeting on Complement in Human Disease
- 2014 **EMBO fellowship** to work on leukocyte integrins with Tim Springer at Harvard Medical School
- 2013 **Article of the month award** from the French Society for Biochemistry and Molecular Biology for *Proc Natl Acad Sci U S A* 2013 110 (41); 16426-31
- 2013 **Travel award** from the Scandinavian Society of Immunology to present at the International Congress of Immunology (Milano, Italy; 2013)
- 2012 **Travel award** from the Erice International School of Crystallography

### Ad hoc reviewer:

ACS Infectious Diseases  
Cell  
Cell Reports  
eLife  
Frontiers in Immunology  
Immunity  
Nature  
Nature Medicine  
Proceedings of the National Academy of Sciences of the United States of America  
PLoS Pathogens  
Science  
Virology

## Publications

1. Altomare CG, Adelsberg DC, Carreno JM, Sapse IA, Amanat F, Ellebedy AH, Simon V, Krammer F, **Bajic G**. Structure of a germline-like human antibody defines a neutralizing epitope on the SARS-CoV-2 spike NTD. *bioRxiv* 2021.07.08.451649; doi: <https://doi.org/10.1101/2021.07.08.451649>
2. Schmitz AJ, Turner JS, Liu Z, Zhou JQ, Aziati ID, Chen RE, Joshi A, Bricker TL, Darling TL, Adelsberg DC, Altomare CG, Alsoussi WB, Case JB, VanBlargan LA, Lei T, Thapa M, Amanat F, Jeevan T, Fabrizio T, O'Halloran JA, Shi PY, Presti RM, Webby RJ, Krammer F, Whelan SPJ, **Bajic G**, Diamond MS, Boon ACM, Ellebedy AH. A vaccine-induced public antibody protects against SARS-CoV-2 and emerging variants. *Immunity*. 2021 Aug 17:S1074-7613(21)00345-9. doi: 10.1016/j.immuni.2021.08.013. PMID: 34464596.
3. Kaugars K, Dardick J, de Oliveira AP, Weiss KA, Lukose R, Kim J, Leung L, Rajagopalan S, Wolin S, Akabas L, Knipe DM, **Bajic G**, Jacobs WR Jr. A recombinant herpes virus expressing influenza hemagglutinin confers protection and induces antibody-dependent cellular cytotoxicity. *Proc Natl Acad Sci U S A*. 2021 Aug 24;118(34):e2110714118. doi: 10.1073/pnas.2110714118. PMID: 34417304.
4. Amanat, F., Thapa, M., Lei, T., Sayed Ahmed, S.M., Adelsberg, D.C., Carreno, J.M., Strohmeier, S., Schmitz, A.J., Zafar, S., Zhou, J.Q., Rijnink, W., Alshammary, H., Borchering, N., Reiche, A.G., Srivastava, K., Sordillo, E.M., van Bakel, H., The Personalized Virology Initiative, Turner, J.S., **Bajic, G.**,\* Simon, V.\*, Ellebedy, A.H.\*, Krammer, F.\*, SARS-CoV-2 mRNA vaccination induces functionally diverse antibodies to NTD, RBD and S2. 2021 *Cell*. Jul 22;184(15):3936-3948.e10. doi: 10.1016/j.cell.2021.06.005. Epub 2021 Jun 8. PMID: 34192529  
\* corresponding
5. Jensen RK, **Bajic G**, Sen M, Springer TA, Vorup-Jensen T, Andersen GR. Complement Receptor 3 Forms a Compact High-Affinity Complex with iC3b. 2021 *J Immunol*. Epub 2021/06/13. doi: 10.4049/jimmunol.2001208.
6. Tong P, Gautam A, Windsor I, Travers M, Chen Y, Garcia N, Whiteman NB, McKay LGA, Lelis FJN, Habibi S, Cai Y, Rennick LJ, Duprex WP, McCarthy KR, Lavine CL, Zuo T, Lin J, Zuiani A, Feldman J, MacDonald EA, Hauser BM, Griffiths A, Seaman MS, Schmidt AG, Chen B, Neuberg D, **Bajic G**, Harrison SC, Wesemann DR. Memory B cell repertoire for recognition of evolving SARS-CoV-2 spike. 2021 *Cell*. Jul 23:S0092-8674(21)00884-9. doi: 10.1016/j.cell.2021.07.025 PMID: 34332650.
7. **Bajic G.**, Harrison SC. Antibodies That Engage the Hemagglutinin Receptor-Binding Site of Influenza B Viruses. 2021 *ACS Infect Dis*. 7(1):1-5.  
\* corresponding
8. **Bajic G.**, Maron M.J., Caradonna T.M., Tian M., Mermelstein A., Fera D., Kelsoe G., Kuraoka M. and Schmidt A.G. Structure-Guided Molecular Grafting of a Complex Broadly Neutralizing Viral Epitope. 2020 *ACS Infect Dis*. 6(5):1182-1191
9. van der Poel C.E., **Bajic G.**, Macaulay C.W., Ellson C.D., Bouma G., Victora G.D., Degn S.E. and Carroll M.C. Follicular Dendritic Cells Modulate Germinal Center B Cell Diversity through FcγRIIB. 2019 *Cell Reports* 29, 2745-2755
10. **Bajic, G.**, Maron, M. J., Adachi, Y., Onodera, T., McCarthy, K. R., McGee, C. E., Sempowski, G. D., Takahashi, Y., Kelsoe, G., Kuraoka, M. and Schmidt, A. G. Influenza Antigen Engineering Focuses Immune Responses to a Subdominant but Broadly Protective Viral Epitope. 2019 *Cell Host Microbe* 25, 827-835
11. Watanabe, A., McCarthy, K. R., Kuraoka, M., Schmidt, A. G., Adachi, Y., Onodera, T., Tonouchi, K., Caradonna, T. M., **Bajic, G.**, Song, S., McGee, C. E., Sempowski, G. D., Feng, F., Urick, P., Kepler, T. B., Takahashi, Y., Harrison, S. C., and Kelsoe, G. Antibodies to a Conserved Influenza Head Interface Epitope Protect by an IgG Subtype-Dependent Mechanism. 2019 *Cell* 177, 1124-1135

12. **Bajic, G.**, van der Poel C.E., Kuraoka M., Schmidt A.G., Carroll M.C., Kelsoe G. and Harrison S.C. Autoreactivity profiles of influenza hemagglutinin broadly neutralizing antibodies. 2019 *Sci Rep.* 9(1):3492. doi: 10.1038/s41598-019-40175-8
13. Raymond D.D.\*, **Bajic G.\***, Ferdman J., Suphaphiphat P., Settembre E.C., Moody M.A., Schmidt A.G., Harrison S.C. Conserved epitope on influenza-virus hemagglutinin head defined by a vaccine-induced antibody. 2018 *Proc Natl Acad Sci U S A.* 115(1):168-173 doi: 10.1073/pnas.1715471115.  
\* co-first author
14. Degn S.E., van der Poel C.E., Firl D.J., Ayoglu B., Al Qureshah F.A., **Bajic G.**, Mesin L., Reynaud C.A., Weill J.C., Utz P.J., Victora G.D., Carroll M.C. Clonal evolution of autoreactive germinal centers. 2017 *Cell.* 170(5):913-926
15. Raymond D., Stewart S., Lee J., Ferdman J., **Bajic G.**, et al. and Harrison S.C. Influenza immunization elicits hemagglutinin receptor-site antibodies specific for an egg-adapted vaccine strain. 2016 *Nature Medicine* 22(12):1465-1469
16. Jensen R.M.\*, **Bajic G.\***, Zhang X.\*, Laustsen A.K., Koldso H., Kirkeby Skeby K., Schiott B., Andersen G.R., and Vorup-Jensen T. Structural basis for simvastatin competitive antagonism of complement receptor 3. 2016 *J. Biol. Chem* 291(33):16963-76  
\* co-first author
17. Zhang X., **Bajic G.**, Andersen G.R., Christiansen S.H. and Vorup-Jensen T. The cationic peptide LL-37 binds Mac-1 (CD11b/CD18) with a low dissociation rate and promotes phagocytosis. 2016 *Biochim. Biophys. Acta* 1864: 471-8
18. **Bajic G.**, Degn S.E., Thiel S. and Andersen G.R. Complement activation, regulation and molecular basis for complement-related diseases. 2015 *EMBO J.* 34: 2735-57
19. Yatime L., **Bajic G.**, Schatz-Jakobsen J.A. and Andersen G.R. Complement regulators and inhibitors in health and disease: A structural perspective. 2016 *Nanomedicine*, CRS Advances in Delivery Science and Technology Book Series.
20. **Bajic G.**, Yatime L., Sim R.B., Vorup-Jensen T. and Andersen G.R. Structural insight on the recognition of surface-bound opsonins by the integrin I domain of complement receptor 3. *Proc Natl Acad Sci U S A* 2013 110(41) ; 16426-31
21. **Bajic G.**, Yatime L., Klos A. and Andersen G.R. Human C3a and C3a desArg anaphylatoxins have conserved structures, in contrast to C5a and C5a desArg. *Protein Science*, 2013 22(2): 204-212.
22. Stelter M., Gutsche I., Kapp U., Bazin A., **Bajic G.**, Goret G., Jamin M., Timmins J. and Terradot L. Architecture of a dodecameric bacterial replicative helicase. *Structure.* 2012 20(3) : 554-64
23. Rhimi M., **Bajic G.**, Ilhammami R., Boudebouze S., Maguin E., Haser R., and Aghajari N. The relevant L-arabinose isomerase from *Shewanella* sp. ANA-3 is highly active at low temperatures. *Microbial Cell Factories* 2011 ; 10:96
24. Rhimi M., Ilhammami R., **Bajic G.**, Boudebouze S., Maguin E., Haser R., and Aghajari N. The acid tolerant L-arabinose isomerase from the food grade *Lactobacillus sakei* 23K is an attractive D-tagatose producer. *Bioresource Technology* 2010 101(23) ; 9171-7

## Presentations

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|------|---|
| 2021 | <i>Comment fonctionnent les vaccins à ARN contre le COVID-19?</i> (invited talk)<br>La Condamine, liceo franco-ecuatoriano, Quito, Ecuador                  |
| 2021 | <i>Structure-guided protein engineering for next-generation vaccines</i> (invited talk)<br>Dartmouth College, Hannover, NH                                  |
| 2020 | <i>Structural epitope mapping of antibody responses to viral glycoproteins</i> (invited talk)<br>Global Health & Emerging Pathogens Institute, New York, NY |
| 2020 | <i>Structural epitope mapping of antibody responses to viral glycoproteins</i> (invited talk)<br>Columbia University, New York, NY                          |
| 2020 | <i>Structure-guided influenza virus antigen engineering focuses immune responses</i>  |

(selected oral abstract)

SBGrid/NECAT webinar, Boston, MA

2019 *Autoreactivity profiles of influenza hemagglutinin broadly neutralizing antibodies*

(selected oral abstract)

Molecular Approaches to Vaccines and Immune Monitoring, Keystone, CO

2019 *Glycan engineering to focus adaptive immune responses* (selected oral abstract)

13th Jenner Glycobiology and Medicine Symposium, Cambridge, MA

2019 *Influenza virus immunogen design to direct adaptive immune responses* (invited talk)

Immunity and Infection lecture series, Department of Biomedicine, Aarhus University, Denmark

2019 *Glycan engineering to focus adaptive immune responses* (selected oral abstract)

Danish Immunology Society Annual Meeting, Copenhagen, Denmark