**Curriculum Vitae**

Gregers Rom Andersen, Born 13/2/1967, Danish Citizen.

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| **Academic Degree:** |  |
| 1995 | PhD thesis in macromolecular crystallography, Department of Chemistry, Aarhus University (AU). |
| **Appointments:** |  |
| 1995-1996 | Post-doc in the macromolecular crystallography headed by professor Dino Moras at IGBMC, Université Louis Pasteur, Strasbourg, France. |
| 1997-2000 | Research Assistant Professor, IMSB, AU. |
| 2000-2002 | Research Associate Professor, IMSB, Aarhus university. |
| 2002-2012 | Associate Professor, Department of Molecular Biology, Aarhus university. |
| 2013- | Professor, Department of Molecular Biology and Genetics, AU |

**Memberships**

2005- Danish National Committee for Crystallography

2005-2009 Board of Dansync/Danscatt

2005-2008 Nordsync delegate at the ESRF (European Synchrotron Radiation Facility, Grenoble) council, Chairman of the Nordsync delegation in 2007

2007-2009 Chairman of the teaching committee at the Department of Molecular Biology

2007-2012 Chairman of the Danish National Committee for Crystallography

2011- EMBO member

2013- Management board of the Department of Molecular Biology and Genetics, AU

**Web page:**

[**http://mbg.au.dk/gra**](http://mbg.au.dk/gra)

[**http://mbg.au.dk/csb**](http://mbg.au.dk/csb)

**Scientific summary.** Structural biology and in particular crystallography and small angle scattering applied to large macromolecules and their complexes. The main biological focus is on components of the innate immune system in order to discover the molecular basis of detecting and responding to exogenous and endogenous danger signals. Both soluble proteins and membrane bound proteins are investigated. In addition, inhibitor development based on atomic structures is pursued with the aim of controlling both acute and chronic inflammatory conditions.

**Publications:** 64 peer reviewed publications, 2016 citations, H-index 25 (Scopus, August 2014).

**Ongoing international collaborations:** Prof. Andreas Klos, Hannover (complement receptors). Prof. Peter Gal, Budapest (complement activation)). Dr Klaus Hviid Nielsen, Universityof Chicago (helicases). Lubka Roumenina, Paris (convertases). Timothy Springer, Harvard Medical School (complement receptors). Noxxon Pharma, Berlin (complement inhibitors). Alexion Pharmaceuticals, Conneticut (complement inhibitors).

**Honours**

2009-2014. Hallas-Møller stipend awarded by the Novo-Nordisk Foundation.

**Peer reviewed publications Gregers Rom Andersen**

1. Kjaer, T.R., Le, L. T. M., Pedersen, J.S, Sander, B., Golas, M.M., Jensenius, J.C., Andersen, G.R. and Thiel,S. (2014), *Structure, S0969-2126(14)00407-9*. Structural insights into the initiating complex of the lectin pathway of complement activation.
2. Degn, S., Kjaer, T. R., Kidmose, R. T., Jensen, L., Hansen, A. G., Tekin, M., Jensenius, J. C., Andersen, G. R., and Thiel, S. (2014) *Proc Natl Acad Sci U S A,111,* *13445-50*. Complement activation by ligand-driven juxtaposition of distinct pattern recognition complexes.
3. Yatime, L & Andersen, GR (2014) *The Journal of Experimental Medicine,211, 749-50*. The specificity of DNA recognition by the RAGE receptor.
4. Schatz-Jakobsen JA, Yatime L, Larsen C, Petersen SV, Klos A & Andersen GR (2014) *Acta Crystallographica D, 70, 1704-17*. Structural and functional characterization of human and murine C5a anaphylatoxins
5. Favaro FP, Alvizi L, Zechi-Ceide RM, Bertola D, Felix TM, de Souza J, Raskin S, Twigg SRF, Weiner AMJ, Armas P, Margarit E, Calcaterra NB, Andersen GR, McGowan S, Wilkie AOM,Richieri-Costa A, de Almeida MLG & Passos-Bueno, MR. (2014) *The American Journal of Human Genetics,94, 120-8*. A Non-coding expansion in EIF4A3 causes Richieri-Costa-Pereira syndrome, a craniofacial disorder associated with limb defects.
6. Yatime, L. & Andersen G.R. (2013). *FEBS Journal, 280, 6556-68*. Structural insights into the oligomerization mode of the human Receptor for Advanced Glycation End-products (RAGE).
7. Bajic G, Yatime L, Sim R.B., Vorup-Jensen T, Andersen G.R. (2013). *PNAS,110, 16426-31*. Structural insight on the recognition of surface-bound opsonins by the integrin I domain of complement receptor 3.
8. Brodersen. D.B., Andersen, G.R. and Andersen, C.B.F. (2013). *Acta Cryst. F69, 815-820*. Mimer: an automated spreadsheet-based crystallization screening system.
9. Kjaer, T.R., Thiel, S., and Andersen,G.R (2013). *Molecular Immunology,56,413-422*. Towards a structure-based comprehension of the lectin pathway of complement.
10. Bajic, G., Yatime, L., Klos, A., Andersen, G.R. (2013) *Protein Sci. 22, 204-12*. Human C3a and C3a desArg anaphylatoxins have conserved structures, in contrast to C5a and C5a desArg.
11. Kidmose, R.T., Laursen, N.S., Dobó, J, Kjaer, T.R., Sirotkina, S., Yatime, L., Sottrup-Jensen, L., Thiel, S., Gál, P. and Andersen, G.R.. (2012) *PNAS,109, 15425-30*. Structural basis for activation of the complement system by component C4 cleavage.
12. Andersen CB, Torvund-Jensen M, Nielsen MJ, de Oliveira CL, Hersleth HP, Andersen NH, Pedersen JS, Andersen GR, Moestrup SK. (2012) *Nature,* 489, 456-9. Structure of the haptoglobin-haemoglobin complex.
13. Laursen NS, Magnani F, Gottfredsen RH, Petersen SV,Andersen GR. (2012). *Curr Mol Med. 12, 1083-1097.* [Structure, function and control of complement C5 and its proteolytic fragments.](http://www.ncbi.nlm.nih.gov/pubmed/22812419)
14. Marrero, A., Duquerroy, S., Trapani, S., Goulas, T., Guevara, T., Andersen G.R., Navaza, J., Sottrup-Jensen L., and Xavier Gomis-Rüth, F. (2012) *Angewandte chemie (International edition in English*), doi: 10.1002/anie.201108015. The crystal structure of human α2-macroglobulin reveals a unique molecular cage.
15. He, Y., Andersen, G.R. and Nielsen, K.H. (2011) *Biomolecular Concepts*, *2, 315–326*. The function and architecture of DEAH/RHA helicases.
16. Laursen, N. S., Andersen, K.R., Braren, I., Spillner, E., Sottrup-Jensen, L., and Andersen, G.R. (2011) *EMBO J. 30, 606-16*. Substrate recognition by complement convertases revealed in the C5-cobra venom factor complex.
17. Nielsen, K.H., Behrens, M.A., He, Y., Oliveira, C.L.P. , Jensen, L.S., Hoffmann, S.V., Pedersen, J.S., and Andersen, G.R. (2011). *Nucleic Acids Research, 39, 2678-89*. Synergistic activation of eIF4A by eIF4B and eIF4G.
18. Juul, T., Malolepszy, A., Dybkær, K., Kidmose, R., Rasmussen. J.T., Andersen, G.R., Johnsen, H.E., Jørgensen, J.-E. & Andersen, S.U. (2010) *J. Biol. Chem.*, *285, 21411-5*. The in vivo toxity of hydroxyurea depends on its direct target catalase.
19. Kidmose, R.T., Vasiliev, N.N., Chetverin, A.B., Andersen, G.R. & Knudsen, C.R. (2010) *PNAS 107, 10884-9*. Structure of the Qβ replicase, an RNA-dependent RNA polymerase consisting of viral and host proteins.
20. Andersen,C.B.F, Madsen, M., Storm, T., Moestrup, S.K., and Andersen, G.R. (2010) *Nature*, *464, 445-8*.Structural Basis for Receptor Recognition of Vitamin-B12-Intrinsic Factor Complexes.
21. He, Y., Andersen, G.R., & Nielsen, K. H. (2010) *EMBO reports, 11, 180-6*. Structural basis for the function of DEAH helicases.
22. Laursen, N. S., Gordon, N. , Hermans, S., Natalie Lorenz, N., Jackson, N., Wines, B., Spillner, E., Christensen, J.B., Jensen, M., Fredslund, F., Bjerre, M., Sottrup-Jensen, L., Fraser, J.F., and Andersen, G.R. (2010) *PNAS*, *107, 3681-6*. Structural basis for inhibition of complement C5 by the SSL7 protein from Staphylococcus aureus.
23. Nielsen, K.H., Chamieh,H., Andersen, C.B.F., Fredslund, F., Hamborg, K., Le Hir, H., Andersen, G.R. (2009). *RNA, 15, 67-75*. Mechanism of ATP turnover inhibition in the EJC.
24. Fredslund, F., Laursen,N.S., Roversi, P., Jenner,L., Oliveira,C.L.P., Pedersen, J.S., Nunn, M.A., Lea, S.M., Discipio, R., Sottrup-Jensen, L., Andersen, G.R. (2008). *Nature Immunology*. *9, 753-60*. Structure of and influence of a tick complement inhibitor on human complement component 5.
25. Le Hir, H. and Andersen, G.R. (2008) Curr. Opinion in Structural Biology, *18, 112-9*. Structural Insights into the exon junction complex.
26. Taylor D.J, Nilsson J., Merrill A.R., Andersen, G.R, Nissen P, and Frank, J, (2007). *EMBO Journal, 26, 2421-31.* Structures of Modified eEF2-80S Ribosome Complexes Reveal the Role of GTP Hydrolysis in Translocation.
27. Søe, R., Mosley, R.T., Justice M., Nielsen-Kahn, J., Shastry, M., Merrill, A.R., and Andersen G.R. (2007). *J. Biol. Chem. 282, 657-666*. Sordarin derivatives induce a novel conformation of the yeast ribosome translocation factor eEF2.
28. Andersen, C. B. F., Ballut, L., Johansen, J. S., Chamieh, H., Nielsen, K. H., Oliveira, C. L. P., Pedersen, J. S., Seraphin, B., Le Hir, H., and Andersen, G. R. (2006) *Science 313, 1968-1972*. Structure of the exon junction core complex with a trapped DEAD-box ATPase bound to RNA.
29. Andersen, C.B.F., Becker, T. , Blau, M., Anand, M., Halic, M., Balar, B., Mielke, T., Boesen, T. , Pedersen, J. S., Spahn, C.M.T., Kinzy, T.G., Andersen, G.R., Beckmann, R. (2006). *Nature 443, 663-668*. Structure of the ABC protein eEF3 and its mechanism of tRNA release from the E-site.
30. Fredslund, F., Jenner, L., Husted, L. B., Nyborg, J., Andersen, G. R., and Sottrup-Jensen, L. (2006) *J. Mol. Biol. 361, 115-127*. The structure of bovine complement component 3 reveals the basis for thioester function.
31. Pittman, Y.R., Valente, L., Jeppesen, M.G., Andersen, G.R., Patel, S., Kinzy, T.G. (2006) *J. Biol. Chem*. *281, 19457-68*. Mg2+ and a key lysine modulate exchange activity of eukaryotic translation elongation factor 1Balpha.
32. Yates, S.P., Jørgensen, R., Andersen, G.R., Merrill A.R. (2006) *Trends Biochem Sci., 31, 123-33*. Stealth and mimicry by deadly bacterial toxins.
33. Jørgensen, R., Merrill, A.R., Andersen, G.R. (2006) *Biochem. Soc. Trans. 34, 1-6*. The life and death of translation elongation factor 2.
34. Basilio, A., Justice, M., Harris, G,, Bills, G., Collado, J., de la Cruz, M., Diez, M.T., Hernandez, P., Liberator, P., Nielsen Kahn, J., Pelaez, F., Platas, G., Schmatz, D., Shastry, M., Tormo, J.R., Andersen, G.R., Vicente, F. (2006) *Bioorg. Med. Chem. 14, 560-566*. The discovery of moriniafungin, a novel sordarin derivative produced by Morinia pestalozzioides.
35. Jørgensen, R, Merrill, A.R., Yates, S.P., Marquez, V.E., Schwan, A.L., Boesen, T., Andersen, G.R.(2005). *Nature 436, 979-84*. Exotoxin A-eEF2 complex structure indicates ADP-ribosylation by ribosome mimicry.
36. Yates, S.P., Taylor, P.L., Jorgensen, R., Ferraris, D., Zhang, J., Andersen, G.R., Merrill, A.R. (2005) *Biochem J.* 385, 667-75. Structure-function analysis of water soluble inhibitors of the catalytic domain of exotoxin A from Pseudomonas aeruginosa.
37. Jorgensen R., Yates S.P., Teal D.J., Nilsson J., Prentice G., Merrill A.R., Andersen, G.R. (2004) *J. Biol. Chem.*  279, 45919-25*.* Crystal structure of ADP-ribosylated ribosomal translocase from Saccharomyces cerevisiae.
38. Andersen, C.F., Anand, M., Boesen, T., Van, L.B., Kinzy, T.G.,Andersen, G.R. (2004) *Acta Crystallogr.* D, 60, 1304-7. Purification and crystallization of yeast translation elongation factor eEF3.
39. Boesen T, Mohammad, S.S., Pavitt G.D., Andersen, G.R. (2004) *J. Biol. Chem.* 279,10584-92. Structure of the Catalytic Fragment of Translation Initiation Factor 2B and Identification of a Critically Important Catalytic Residue.
40. Spahn, C.M., Gomez-Lorenzo, M.G., Grassucci, R.A., Jorgensen, R, Andersen, G.R., Beckmann, R., Penczek, PA, Ballesta J.P., Frank J. (2004) *EMBO J.* 23, 1008-1019. Domain movements of elongation factor eEF2 and the eukaryotic 80S ribosome facilitate tRNA translocation.
41. Jørgensen, R., Ortiz, P.A., Carr-Schmid, A., Nissen, P., Kinzy, T.G. and Andersen, G.R. (2003) *Nature Structural Biology*. 10, 379-85. Two crystal structures demonstrate very large conformational changes in the eukaryotic translocase.
42. Andersen, G.R., Nissen, P. and Nyborg, J. (2003). *Trends Biochem Sci*, 28, 434-441. Elongation factors in protein biosynthesis.
43. Vanwetswinkel, Kriek, J., Andersen, G.R., Guntert, P., Dijk, J., Canters, G.W. and Siegal, G. (2003) *J Biol Chem*, 278, 43443-51. Solution structure of the 162 residue C-terminal domain of human Elongation Factor 1Bgamma.
44. Jeppesen, M.G., Ortiz, P., Shepard, W., Kinzy, T.G., Nyborg, J. and Andersen, G.R. (2003) *J Biol Chem*, 278, 47190-8. The crystal structure of the GST-like domain of elongation factor 1Bg from Saccharomyces cerevisiae.
45. Vanwetswinkel, S., Kriek, J., Andersen, G.R., Dijk, J. and Siegal, G. (2003) *J Biomol NMR*, 26, 189-190. 1H, (15)N and (13)C resonance assignments of the highly conserved 19 kDa C-terminal domain from human Elongation Factor 1Bgamma.
46. Jørgensen, R., Carr-Schmid, A., Ortiz, P.A., Kinzy, T.G. and Andersen, G.R. (2002) *Acta Crystallogr.* D58, 712-715. Purification and crystallization of the yeast elongation factor eEF2.
47. Kandl, K. A., Munshi, R., Ortiz, P. A., Andersen, G. R., Kinzy, T. G., and Adams, A. E. (2002). *Mol. Genet. Genomics 268*, 10-18. Identification of a role for actin in translational fidelity in yeast.
48. Karring, H., Andersen, G. R., Thirup, S. S., Nyborg, J., Spremulli, L. L., and Clark, B. F. (2002). *Biochim. Biophys. Acta, 1601*, 172-177. Isolation, crystallisation, and preliminary X-ray analysis of the bovine mitochondrial EF-Tu:GDP and EF-Tu:EF-Ts complexes.
49. Andersen, G. R., Valente, L., Pedersen, L., Kinzy. T.G. and Nyborg, J. (2001) *Nature Structural Biology, 8,* 531-534*.* Crystal structures of nucleotide exchange intermediates in the eEF1A:eEF1B complex.
50. Vestergaard B, Van L.B., Andersen G.R., Nyborg J, Buckingham RH, Kjeldgaard M. (2001) *Molecular Cell 8,* 1375-1382, Bacterial polypeptide release factor RF2 is structurally distinct from eukaryotic eRF1.
51. Andersen, G. R., Pedersen, L., Kinzy, T.G., Valente, L., Chatterjee, I., Kjeldgaard, M. and Nyborg, J. (2000) *Molecular Cell* 6, 1261-1266*.* Structural basis for nucleotide exchange and competition with tRNA in the yeast elongation factor complex eEF1A:eEF1B.
52. Pedersen, L., Andersen, G.R., Knudsen, C. R., Kinzy, T.G. and Nyborg, J. (2000) *Acta Cryst. D., D57*, 159-161*.* Crystallization of the yeast elongation factor complex eEF1A:eEF1B.
53. Andersen, G. R., Thirup, S., Spremulli, L. and Nyborg, J. (2000) *J. Molecular Biology* 297, 421-436. High resolution X-ray structure of bovine mitochondrial EF-Tu in complex with GDP.
54. Brodersen, D. E., Jenner, L. B., Andersen, G. R., Nyborg, J. (1999) *J. Appl. Cryst.* 32, 1012-1016. XAct: a program for construction, automated setup and bookkeeping of crystallization experiments.
55. Andersen, G., Busso, D., Poterzman, A.,Hwang, J. R., Wurtz, J.-M., Ripp, R., Thierry, J.-C., Egly, J.M., Moras, D. (1997) *EMBO Journal* 16, 958-967. The structure of cyclin H: common mode of kinase activation and specific features.
56. Poterzman, A., Andersen, G., Busso, D., Rossignol, M. Egly, J.M. and Thierry, J.-C. (1997) *Protein expression and purification* 9, 153-158. Expression in *Eschericia coli*: Purification and Characterization of Cyclin H, a Subunit of the Human General Transcription/DNA Repair Factor TFIIH.
57. Andersen, G. R. and Nyborg, J. (1996) *J. Appl. Cryst.* 29, 236-240. A Spreadsheet Approach to Automated Protein Crystallization.
58. Andersen, G. Poterzman, A., Egly, J.M., Moras, D. and Thierry, J.-C. (1996) *FEBS Letters* 397, 65-69. The crystal structure of human cyclin H.
59. Andersen, G., Koch, T.J., Dolmer, K., Sottrup-Jensen, L. and Nyborg, J. (1995) *J. Biol. Chemistry*, 270, 25133-25141. Low Resolution X-ray Structure of Human Methylamine-treated 2-Macroglobulin.
60. Dolmer, K., Jenner, L. B., Jacobsen, L., Andersen, G. R., Koch, T. J., Thirup, S., Sottrup-Jensen, Nyborg, J. (1995) *FEBS Letters*, 372, 93-95. Crystallization and preliminary X-ray analysis of the receptor-binding domain of human and bovine 2-macroglobulin.
61. Andersen, G. R., Thirup, S., Nyborg, J., Dolmer, K., Jacobsen, L. and Sottrup-Jensen, L. (1994) *Acta Cryst.* D50, 298-301. Low-Resolution X-ray diffraction Data obtained from hexagonal Crystals of methylamine-treated 2-macroglobulin.
62. Sørensen, A. H., Dolmer, K., Thirup, S., Andersen, G. R., Sottrup-Jensen, L and Nyborg, J. (1994) *Acta Cryst.* D50 768-789. Crystallization of human methylamine-treated complement C3 and C3b.
63. Andersen, G. R., Koch, T., Sørensen, A. H., Dolmer, K., Thirup, S., Nyborg, J., Dolmer, K., Jacobsen, L. and Sottrup-Jensen, L. (1994) *Annals of the N.Y. Academy of Science* 737, 444-446. Crystallization of Proteins in the 2-Macroglobulin Superfamily.
64. Andersen, G. R., Jacobsen, L., Thirup, S., Nyborg, J. and Sottrup-Jensen, L. (1991). *FEBS Letters* 292, 267-270. Crystallization and preliminary X-ray analysis of methylamine-treated 2-macroglobulin and 3 2-macroglobulin-proteinase complexes

**Book chapters**

1. Yatime, L., Bajic, G., Schatz-Jakobsen, J.A. & Andersen, G.R. (In press). Complement regulators and inhibitors in health and disease: A structural perspective. *Nanomedicine*, CRS Advances in Delivery Science and Technology Book Series.
2. Sottrup-Jensen, L. and Andersen, G.R. (2014). Purification of human complement protein C5. *Methods Mol. Biol,* 1100, 93-102*,* Humana Press*, editor Mihaela Gadjeva.*
3. Behrens MA, He Y, Oliveira CL, Andersen GR, Pedersen JS, Nielsen KH. (2012). *Methods Enzymol.* *511, 191-212*. Structural Analysis of RNA Helicases with Small-Angle X-ray Scattering.
4. Oliveira, C.L.P.D., Vorup-Jensen, T., Andersen, C.B.F., Andersen, G.R., Pedersen, J.S. (2009). [Discovering New Features of Protein Complexes Structures by Small-Angle X-Ray Scattering](http://person.au.dk/da/pub/au01_2009_6d590350-92f0-11de-a092-000ea68e967b?id=6322). *Applications of Synchrotron Light to Scattering and Diffraction in Materials and Life Sciences*, 231-44. Springer Verlag.
5. Andersen, G.R. and Nyborg, J. (2001) *Cold Spring Harb Symp Quant Biol*, 66, 425-437. Structural studies of eukaryotic elongation factors.
6. Andersen, G. R., Stepanov, V.G., Kjeldgaard, M., Thirup, S. S. and Nyborg, J. (1999). Ternary Complex of EF-Tu and Its Action on the ribosome. *The Ribosome: Structure, Function, Antibiotics and Cellular Interactions* , 337-346. ASM Press, Washington.

**Phd thesis**

Andersen, G. R. (1994) University of Aarhus. Structural Studies of 2-Macroglobulin.

**Popular science presentations**

1. Fredslund, F., Laursen,N.S., Sottrup-Jensen, L., Andersen, G.R. (2008). *Dansk kemi* 89, 44-48.Den rummelige opbygning af proteiner fra immunforsvaret.
2. Andersen, G.R and Nyborg, J. (2004) *Samvirke, FDB, ISSN. 0036-3944*, 8, 32-36. Images from the book of life.