

## Curriculum vitae

### Margarida Archer Franco Frazão

Born 26/ June/ 1968 in Lisbon; Portuguese nationality; Married, 5 children  
Instituto de Tecnologia Química e Biológica - Universidade Nova de Lisboa (ITQB – UNL)  
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### Education

- 1999 PhD degree in Biochemistry at Instituto de Tecnologia Química e Biológica - Universidade Nova de Lisboa, ITQB/UNL.
- 1992 Degree in Applied Chemistry, major in Biotechnology (five year degree, final mark 17/20) at Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, FCT/UNL, one Semester at “Eberhardt-Karls-Universität Tübingen”, Germany, through ERASMUS program (1990/91).

### Employment

- From 07/2003- Auxiliary Investigator at ITQB, Head of Membrane Protein Crystallography Laboratory
- 2000/2001- Invited professor of Chemistry, at Faculty of Engineering - Portuguese Catholic University.
- 1999/2003- Post-Doc at ITQB supervised by M. A. Carrondo.
- 2002/2003- Invited Assistant Professor at Faculdade de Engenharia, Universidade Católica Portuguesa, Polo Sintra
- 1995/99- PhD student at ITQB, supervised by M. J. Romão in collaboration with R. Huber (Nobel Prize Laureate in Chemistry, 1988), Max-Planck Institute, Martinsried by Munique, Germany
- 1993/95- Trainee at ITQB, supervised by M. J. Romão
- 1991/92- Trainee at ITQB, supervised by C. Arraiano
- 1990/91- Teaching Assistant at FCT-UNL (practical laboratory classes)

### Institutional and other activities

- Coordinator of the Free Option Unit, ITQB PhD Program, since 2012
- Coordinator of ITQB seminars (invited speakers within Associated Laboratory ITQB, IBET, IGC, CEDOC)
- National delegate of the European Crystallographic Association, ECA, since 2009

### Areas of Expertise

Structutural Biology, X-ray Crystallography, Membrane Proteins, Disease-related proteins, CDP-alcohol phosphatidyltransferases, Membrane Transporters, Sensor kinases, Sulfur metabolism, Structure-Function relationship

### Reviewing and Evaluation Activity

- Review panel for Acta Crystallographica Section F, since 2012
- Member of European Science Foundation (ESF) Pool of Reviewers, 2009-2011
- Panel Member for Irish Research Council for Science, Engineering and Technology (IRCSET) for postdoctoral proposal Assessment, since 2009 and bilateral agreements (FCT)
- Grant proposal evaluation for ESF, Romanian National Research Council Biotechnology and Biological Sciences Research Council (BBSRC), UK.

### Projects funded

Research projects funded by FCT (Portuguese Foundation for Science and Technology): 6 as Principal Investigator (since 2001) and 22 as team member. Participant in Marie Curie Integrated Training Network (2008-2011) and 2 bilateral agreements (with UK in 2007/8 and Ireland in 2009/10).

### Student supervision

- 10 Post-Doc students (4 ongoing)
- 5 PhD students graduated and 1 ongoing
- 2 master students graduated and 1 bachelor (licenciatura)
- 10 graduate students (3 ongoing)

### Meeting organization

International Masterclass “Structure and function of Membrane Proteins: a multidisciplinary approach”, ITQB (2013); Annual meeting M Curie Network “Structural Biology of Membrane Proteins” (2009); Scientific committee of the International Conference “Hands-on Science”, Braga (2006); BioCrys Courses on “Fundamentals of modern methods in Biocrystallography”, ITQB (since 2004, run every two years), ESF and MAX-INF Workshop “Membrane Proteins: the rocky road from gene to structure”, ITQB (2005); 27<sup>th</sup> Meeting of the FEBS, Lisbon (2001); FEBS Forum of Young Scientists “Protein Structure-Function, Trafficking and Signalling”, Oeiras (2001); Local organizing committee of the 17<sup>th</sup> European Crystallographic Meeting, Lisboa (1997), Portugal.

### Languages

Portuguese, English, (fluent talking, reading and writing), French and German (regular talking, reading and writing)

### Publications and communications

35 Publications in peer reviewed journals

6 Book chapters

48 Communications and 15 Invited oral presentations at international and national meetings

### Selected Publications

- Oliveira, T. F., Franklin, E., Afonso, J. P., Khan, A. R., Oldham, N. J., Pereira, I.A.C., Archer, M. (2011) Structural insights into dissimilatory sulfite reductases. Structure of desulfurubidin from *Desulfomicrobium norvegicum*. Front Microbiol.2, 1-2
- Stelter, M., Melo, A.M.P., Hreggvidsson, G.O., Kristjansson, J.K., Saraiva, L.M., Teixeira, M., Archer, M. (2010) The structure at 1.0 Å resolution of a high-potential iron–sulfur protein involved in the aerobic respiratory chain of *Rhodothermus marinus*, J. Biol. Inorg. Chem.15, 303–313
- de Rosa, M., de Sanctis, D., Rosario, A. L., Archer, M., Rich, A., Athanasiadis, A., Carrondo, M. A. (2010) Crystal structure of a junction between two Z-DNA helices. Proc Natl Acad Sci Usa. 18, 107, 9088-92
- Brito, J.A., Sousa, F.L., Stelter, M., Bandejas, T.M., Vonnrhein, C., Pereira, M.M., Teixeira, M., Archer M. (2009) Structural and functional insights into Sulfide:quinoneoxidoreductase. Biochem 48, 5613-22
- Oliveira, T.F., Vonnrhein, C., Matias, P.M., Venceslau, S.S., Pereira, I.A.C., Archer M. (2008) Purification, crystallization and preliminary crystallographic analysis of a dissimilatory Sulfite Reductase DsrAB in complex with DsrC. J Struct Biol 164, 236-239
- Oliveira, T.F., Vonnrhein, C., Matias, P.M., Venceslau, S.S., Pereira, I.A.C., Archer M. (2008) The crystal structure of *Desulfovibrio vulgaris* dissimilatory sulfite reductase bound to DsrC provides novel insights into the mechanism of sulfate reduction. J Biol Chem 283, 34141-34149
- Stelter, M., Melo, A.M.P., Pereira, M.M., Gomes, C. M., Hreggvidsson, G.O., Kristjansson, J.K., Saraiva, L.M., Teixeira, M., Archer, M. (2008) A novel type of monoheme cytochrome c: Biochemical and structural characterization at 1.23 Å resolution of *Rhodothermus marinus* cytochrome c. Biochem 47, 11953-11963
- Rodrigues, M.L., Scott, K.A., Sansom, M.S.P., Pereira, I. C. P., Archer, M. (2008) Quinol oxidation by cytochromes c: structural characterization of the menaquinolbinding site of NrfHA, J. Mol. Biol.381, 341-350
- Palma, P.N., Rodrigues, M.L., M. Archer, Bonifácio, M.J., Loureiro, A.I., Learmonth, D., Carrondo M.A., Soares-da-Silva, P. (2006) Comparative study of ortho- and meta- nitrated inhibitors of catechol-O-methyltransferase. Interactions with the active site and regioselectivity of O-methylation. Molec. Pharmac. 70, 143-153.
- Rodrigues, M. L., Oliveira, T., Pereira, I.A.C., Archer, M. (2006) The X-ray structure of a bacterial membrane-bound cytochrome c quinol dehydrogenase with novel heme coordination. EMBO J. 25, 5951-5960
- Archer, M., Bonifácio, M.J., Rodrigues, M.L., Matias, P., Learmonth, D.A., Soares-da-Silva, P., Carrondo, M.A. (2002) Kinetics and crystal structure of catechol-O-methyltransferase

- complex with co-substrate and a novel inhibitor with potential therapeutic application. *Molec. Pharmac.* 62, 795-805.
- Archer, M., Carvalho, A.L., Teixeira, S., Moura, I., Moura, J.J.G., Rusnak, F., Romão, M.J. (1999) Structural studies by X-ray diffraction on metal substituted Desulforedoxin, a rubredoxin type protein. *Protein Science* 8, 1536-1545
- Archer, M., Banci, L., Dikaya, E., Romão, M.J. (1997) Crystal Structure of cytochrome c' from *Rhodocyclus gelatinosus* and comparison with other cytochromes c' *J. Biol. Inorg. Chem.* 2, 611-622.
- Huber, R., Hof, P., Duarte, R., Moura, I., Moura, J.J.G., LeGall, J., Archer, M., Romão, M.J. (1996) A structure-Based Catalytic Mechanism for the Xanthine Oxidase Family of Molybdenum Enzymes *Proc. Nat. Acad. Sci. Usa* 93, 8846-8851.
- Archer, M., Huber, R., Tavares, P., Moura, I., Moura, J.J.G., Carrondo, M.A., Sieker, L.C., LeGall, J., Romão, M.J. (1995) Crystal Structure of Desulforedoxin from *Desulfovibrio gigas* determined at 1.8 Å Resolution: A New Non-heme Iron Protein Structure. *J. Mol. Biol.* 251, 690-702.
- Romão, M.J., Archer, M., Moura, I., Moura, J.J.G., LeGall, J., Engh, R., Schneider, M., Hof, P., Huber, R. (1995) Structure of the Aldehyde Oxido-Reductase from *Desulfovibrio gigas* at 2.25 Å resolution: a member of the Xanthine Oxidase Protein Family. *Science* 270, 1170-1176.