Universiteit
Leiden
The Netherlands

Transient complexes of haem proteins

Volkov, O.M.

Citation

Volkov, O. M. (2007, February 28). *Transient complexes of haem proteins*. Leiden Institute of Chemistry/MetProt Group, Faculty of Mathematics and Natural Sciences, Leiden University. Retrieved from https://hdl.handle.net/1887/11002

Version:	Corrected Publisher's Version
License:	Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden
Downloaded from:	https://hdl.handle.net/1887/11002

Note: To cite this publication please use the final published version (if applicable).

Volkov, A. N., Ferrari, D., Worrall, J. A. R., Bonvin, A. M. J. J. & Ubbink, M. The orientations of cytochrome *c* in the highly dynamic complex with cytochrome b_5 visualized by NMR and docking using HADDOCK. *Prot. Sci.* **14**, 799-811 (2005), with a correction in *Prot. Sci.* **15**, 1563 (2006).

Volkov, A. N., Worrall, J. A. R., Holtzmann, E. & Ubbink, M. Solution structure and dynamics of the complex between cytochrome *c* and cytochrome *c* peroxidase determined by paramagnetic NMR. *Proc. Natl. Acad. Sci. U. S. A.* **103**, 18945-18950 (2006).

Volkov, A. N., Worrall, J. A. R. & Ubbink, M. A specificity hot spot in the complex of yeast cytochrome *c* and cytochrome *c* peroxidase (manuscript in preparation).

Volkov, A. N., Worrall, J. A. R., Celie, P. H. N. & Ubbink, M. Mutation-induced increase of binding affinity in the complex of yeast cytochrome *c* and cytochrome *c* peroxidase (manuscript in preparation).

Alex Volkov was born on 22 May, 1978 in Kiev, Soviet Union (present-day Ukraine). He received his secondary education in numerous schools, eventually graduating from Ukrainian Gymnasium, Kiev and joining National Taras Shevchenko University of Kiev in 1995. There he earned BSc (1998) and MSc (2000) degrees in Chemistry and Inorganic Chemistry and produced a graduation thesis *Copper complexes with polydentate aliphatic amines immobilized on silica surface* under the supervision of Prof. Dr. V. N. Zaitsev.

Alex continued his education at Leiden University, the Netherlands, during which period he discovered a fascinating world of biochemistry and became particularly interested in protein chemistry and biomolecular NMR. In 2001 he received the MSc degree at Leiden University and produced a thesis *Investigation of the cytochrome c : cytochrome c peroxidase complex by site-directed spin-labelling* under the supervision of Dr. J. A. R. Worrall and Dr. M. Ubbink.

From 2001 till 2006 Alex pursued his PhD studies in MetProt group of Prof. Dr. G. W. Canters under the supervision of Dr. M. Ubbink (Leiden University) and performed research, the results of which are presented in this book. Currently, he has a short-term post-doctoral position with Dr. M. Ubbink (Leiden University).

First of all I would like to express my gratitude to Prof. Jan Reedijk who enabled my MSc education at Leiden University and supported me during the course of the study.

I am indebted to Jonathan Worrall, my teacher and a dear friend, for helping me to find my place in the vast field of biochemistry. (The weekly Friday night discussions at the "North End" did the trick.)

Special thanks to Peter Crowley whose ideas – both scientific and not – have profoundly influenced my research and general outlook on life.

Sophie "Chicken" Vanwetswinkel is greatly appreciated for the constant professional and moral support in the lab and, in particular, during the preparation of this thesis – the kind of support that only those who really care can provide.

I am truly grateful to Armand Tepper for his kind gift of the picture that adorns the front cover of this thesis after making its debut on the cover of PNAS.

In addition to those mentioned above, Rutger Diederix, Miguel Prudêncio, Monica Vlasie, and Sonya Kuznetsova are thanked for showing me the ropes and sharing in the miseries and joys of the lab life.

Davide Ferrari and Elodie Hotlzmann are thanked for their valuable contributions to the research presented in Chapters II-IV of this thesis.

Martina Huber, Maria Fittipaldi, Michela Finiguerra, Stefano Ceola, and Sergey Milikisyants are acknowledged for their help with EPR.

Patrick Celie and the people from Titia Sixma's and Anastassis Perrakis's groups are thanked, respectively, for the help with ITC and putting up with my presence at NKI.

Kees Erkelens is acknowledged for his help with 600 MHz NMR spectrometer, and Ywan von Dewall is thanked for a quality Dutch translation of the summary.

And last but not least, I would like to thank Prof. Vladimir Zaitsev, my compatriot and erstwhile supervisor, for setting me on the path of scientific discovery and instilling a sense that no barriers are set to an inquisitive mind.