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The Netherlands

## Transient complexes of haem proteins

Volkov, O.M.

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## *Stellingen*

behorende bij het proefschrift

### **Transient Complexes of Haem Proteins**

1. Consideration of intermolecular electrostatic forces alone is often not enough for the correct prediction of the binding geometry in transient protein-protein complexes.

This thesis, Concluding Remarks

2. The size of the binding-induced NMR chemical shift perturbations ( $\Delta\delta$ ) can be used as a reliable diagnostic tool for the dynamics within transient protein-protein complexes.

This thesis, Concluding Remarks and  
Worrall, J. A. R. *et al.* (2001) *Biochemistry* **40**, 7069-76

3. Contrary to the conclusions of Deep *et al.*, the cytochrome  $b_5$  – cytochrome  $c$  complex is best described using the concept of multiple protein – protein orientations illustrated in the present report.

This thesis, Chapter II and Deep S. *et al.* (2005) *Biochemistry* **44**, 10654-68

4. The crystal structure represents the dominant form of the yeast cytochrome  $c$  – cytochrome  $c$  peroxidase complex in solution, which is in equilibrium with a dynamic state.

This thesis, Chapters III and IV

5. Affinity and specificity of transient interactions – though clearly connected – are not linearly related: it is possible to greatly reduce the specificity without substantially decreasing the affinity and vice versa.

This thesis, Chapters V and VI

6. Protein-protein recognition... is not mere binding but is, in principle, binding with purpose. This purpose is to discriminate between the reaction partners and other proteins in the cellular milieu.

Crowley, P.B. Ph.D. thesis (Leiden University, Leiden, The Netherlands, 2002)

7. In contrast to standard protein complexes, the interface in electron transfer complexes is poorly packed.

Crowley, P. B. & Carrondo, M. A. (2004) *Proteins* **55**, 603-12

8. Water can be viewed as a variable part of protein structure, critical to protein function.

Rand, R. P. *et al.* (1993) *Biochemistry* **32**, 5925-9

9. To be learning something new is ever the chief pleasure of humankind.

Aristotle

10. Nothing is at the same time both discovered and perfected.

Cicero

11. Academia places a young person under a kind of compulsion to produce impressive quantities of scientific publications – a temptation to superficiality.

A. Einstein