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## Exploring chemical versatility within the tautomerase superfamily

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# Stellingen

behorende bij het proefschrift

## Exploring Chemical Versatility within the Tautomerase Superfamily

Catalytic Promiscuity and the Emergence of New Enzymes

van Bert-Jan Baas

1. Catalytic promiscuity plays a key role in enzyme evolution. (this thesis)
2. The active site directed inhibitor 2-oxo-3-pentynoate is an effective probe to establish the  $pK_a$  value of Pro-1 in MsCCH2. (this thesis)
3. RhCC is an oxygenase. It demonstrates the chemical versatility of enzymes with a  $\beta$ - $\alpha$ - $\beta$ -fold architecture. (this thesis)
4. An enzyme-bound metal ion is not necessarily a cofactor that is required for catalysis. (this thesis)
5. When producing a recombinant protein in *E. coli*, one should never take the removal of the translation initiating methionine for granted. (this thesis)
6. Characterizing enzymes without studying the possible effects of pH on activities, results in incomplete studies. (this thesis)
7. Studying an enzyme like RhCC is both depressing and rewarding at the same time.
8. Only when you open your mind to the impossible, the greatest discoveries can be made.
9. Simply having a talent for recognizing a fruitful line of research doesn't bring about success. It's knowing when to quit with promising looking ones that makes the difference.
10. Staring at the screen of the spectrophotometer's computer while running an experiment, really does help.
11. Creativity requires chaos (as reflected by the general state of my lab bench).
12. A successful scientist depends greatly on luck.