

# Table of contents

|                                                                                                                                                                                                       |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Danksagung</b>                                                                                                                                                                                     | I   |
| <b>Table of contents</b>                                                                                                                                                                              | III |
| <b>Summary</b>                                                                                                                                                                                        | V   |
| <b>Zusammenfassung</b>                                                                                                                                                                                | VII |
| <b>List of abbreviations</b>                                                                                                                                                                          | IX  |
| <b>Chapter 1:</b> General introduction                                                                                                                                                                | 1   |
| <b>Chapter 2:</b> Evaluation of solvent tolerance and adaptability of <i>P. taiwanensis</i> VLB120 for efficient conversion of cyclohexane to cyclohexanol                                            | 25  |
| <b>Chapter 3:</b> Engineering of <i>P. taiwanensis</i> VLB120 for constitutive solvent tolerance and increased specific styrene epoxidation activity                                                  | 55  |
| <b>Chapter 4:</b> Constitutively solvent-tolerant <i>P. taiwanensis</i> VLB120 $\Delta$ C $\Delta$ ttgV shows particularly high styrene epoxidation activities in two-liquid phase biotransformations | 79  |
| <b>Chapter 5:</b> The application of <i>P. taiwanensis</i> VLB120 $\Delta$ C $\Delta$ ttgV allows a reduction of the amount of solvents in two-liquid phase biotransformations                        | 111 |
| <b>Chapter 6:</b> Solvent tolerance of <i>P. taiwanensis</i> VLB120 is highly dependent on glucose dehydrogenase activity                                                                             | 133 |
| <b>Chapter 7:</b> General discussion                                                                                                                                                                  | 159 |
| <b>Chapter 8:</b> Conclusion & Outlook                                                                                                                                                                | 185 |
| <b>Chapter 9:</b> Appendix                                                                                                                                                                            | 195 |
| <b>Chapter 10:</b> References                                                                                                                                                                         | 205 |
| <b>Curriculum vitae</b>                                                                                                                                                                               | 227 |