# Substrate adaptability of β-lactamase

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# Stellingen

Behorend bij het proefschrift

**Substrate adaptability of β-lactamase BlaC**

1. The cis peptide bond of Pro167 of BlaC is crucial to limit the dynamics of the Ω-loop structure, preventing it from opening the active site pocket.

*Chapter 2*

2. The dynamics of the Ω-loop of β-lactamases influence substrate specificity.

*Chapter 3*

3. Increased thermostability is associated with reduced enzyme entropy, and so with a decrease in its dynamic behaviour.

*Chapter 4*

4. Choosing the right host cells is essential in directed evolution experiments that aim to study the effect of temperature.

*Chapter 4*

5. Buffer conditions can affect the populations of enzyme conformations.

6. Mutations that confer increased activity can be outside the substrate binding pocket.

7. The relationship between thermostability and catalytic activity in enzymes is often a complex and nuanced trade-off rather than a straightforward correlation.

8. Kinetic models help to understand enzyme dynamics.

9. Don’t hurry in science, slow and steady win the race.

10. Achieving a fulfilling balance between professional and personal life is the key to experiencing true happiness.

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Leiden, 20 February 2024