Enzyme evolution using ribosome display


Selection of $\beta$-lactamases using catalytic activity

- What limitations do the authors identify with in vivo or “partially” in vitro type selections?
- What is the strategy used by the authors? Does everyone understand IVT?
- What is the library size limitation?
- What sort of controls do the authors do to test their strategy?
- What are the results?
- What are the problems with this strategy?
Ribosome display

Mechanism of lactamase inhibition by suicide inhibitors

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Figure 6: Enrichment and controls

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T4 DNA ligase selection

• What is the authors’ strategy for selection using ribosome display? (Figure 1)
• What are the controls used to test the strategy? (Figure 3 and 4)
• What are the results? Figure 5
• What are the pitfalls of this method?
• Has ribosome display been used for enzyme evolution?
Figure 1: T4 display and selection

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Figure 5: Catalytic enrichment

A

1:1  1:10  1:100
+   -   -   +   -   +

wt:K159L
(cell-free translation)

active
inactive

B

ratio of presence (%)

+ + +
1:1  1:10  1:100

wt K159L
(cell-free translation)

wt:K159L

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