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Evolutionary adaptability of β -lactamase: a study of inhibitor susceptibility in various model systems

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A study of inhibitor susceptibility in various model systems

Ilona van Alen

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Evolutionary adaptability of β -lactamase

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*Nothing in life is to be feared, it is only to be understood.
Now is the time to understand more, so that we may fear less.*

- Marie Skłodowska-Curie

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List of abbreviations

BMRB	Biological Magnetic Resonance Data Bank
BPER	Bacterial Protein Extraction Reagent
BSA	Bovine serum albumin
CD	Circular dichroism
CSP	Chemical shift perturbation
DBO	Diazabicyclooctane
Dpi	Days post-infection
ESBL	Extended-spectrum β -lactamase
FDA	Food and Drug Administration
Hpf	Hours post-fertilization
HSQC	Heteronuclear single quantum coherence
IPTG	Isopropyl β -D-1-thiogalactopyranoside
MD	Molecular dynamics
MIC	Minimum inhibitory concentration
Mmar	<i>Mycobacterium marinum</i>
Mtb	<i>Mycobacterium tuberculosis</i>
NMR	Nuclear magnetic resonance
OD	Optical density
PBP	Penicillin-binding protein
PBS	Phosphate-buffered saline
PCR	Polymerase chain reaction
PDB	Protein Data Bank
RMSD	Root-mean-square deviation
SDS-PAGE	Sodium dodecyl sulfate-polyacrylamide gel electrophoresis
sgRNA	Single guide RNA
Tat	Twin-arginine translocation
TB	Tuberculosis
TEV	Tobacco etch virus
TROSY	Transverse relaxation optimized spectroscopy
TSA	Thermal shift assay
WT	Wild type