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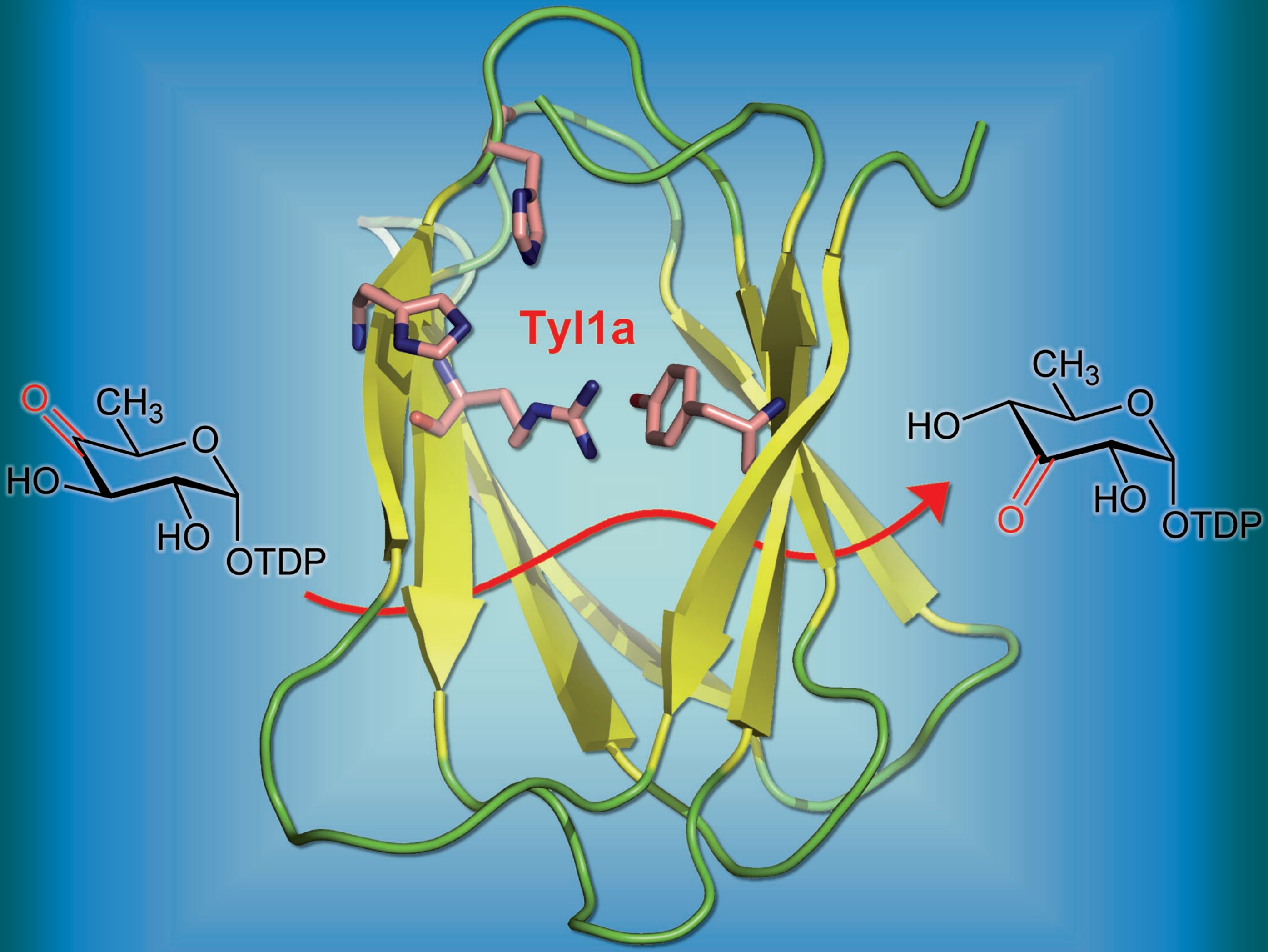

Isomerisation en route to antibiotics

8/2008

Chemistry & Life Sciences

Minireview: Silica Biomineralisation in Diatoms
(M. Sumper)

Plus Original Contributions

EU ChemSoc

WILEY-VCH

Cover Picture

Mónica Tello, Martin Rejzek, Barrie Wilkinson, David M. Lawson*, and Robert A. Field*

The cover picture shows the modelled structure of *Streptomyces fradiae* Tyl1a and the isomerisation reaction it catalyses en route to the biosynthesis of the antibiotic tylosin. Specifically, Tyl1a is a TDP-6-deoxy-D-xylo-4-hexulose 3,4-isomerase. Using a combination of homology modelling, site-directed mutagenesis and solvent isotope incorporation experiments, we have identified potential catalytic residues of Tyl1a. This enzyme is predicted to be dimeric, with the core of each subunit comprised of a cupin-like β-barrel where catalysis takes place. A single β-barrel is shown, with the catalytic residues depicted in full atom representation. This study has enabled us to postulate a reaction mechanism for Tyl1a that is similar to that of the structurally related RmlC family of ketosugar nucleotide epimerases. For more details, see the article by R. Field, D. M. Lawson et al. on p. 1295 ff.