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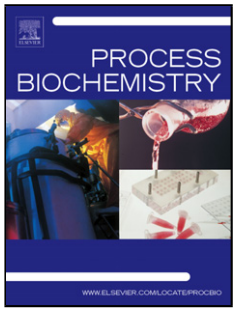

Title: Enzymatic preparation of optically pure t-butyl 6-chloro-(3*R*,5*S*)-dihydroxyhexanoate by a novel alcohol dehydrogenase discovered from *Klebsiella oxytoca*

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Enzymatic preparation of optically pure t-butyl 6-chloro-(3*R*,5*S*)-dihydroxyhexanoate by a novel alcohol dehydrogenase discovered from *Klebsiella oxytoca*

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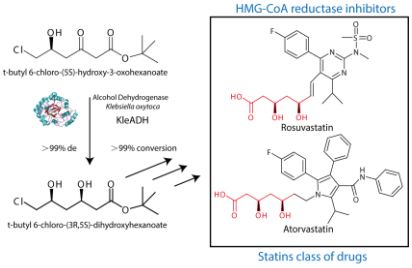
Graphical abstract



Highlights

•Discover a novel alcohol dehydrogenase (named as KleADH) from *Klebsiella oxytoca* by a genome mining method.

•First alcohol dehydrogenase from proteobacterial that could convert t-butyl 6-chloro-(5*S*)-hydroxy-3-oxohexanoate to t-butyl 6-chloro-(3*R*,5*S*)-dihydroxyhexanoate with high enantioselectivity by whole cells.

•A systematic study of several factors influencing the whole-cell catalyst activity such as temperature, pH, the effects of metal ions and organic solvent was performed.

•KleADH exhibited notable activity towards several aryl ketones with high stereoselectivity.