

Hydroxynitrile Lyases

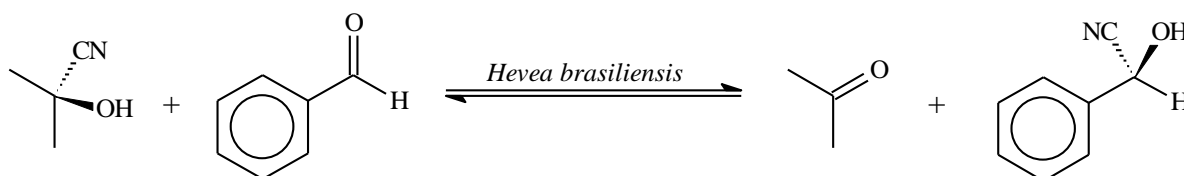
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Institute: Delft University of Technology, Department of Biotechnology
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Description

The enantioselective chemical synthesis of cyanohydrins has attracted considerable attention. There are several enantioselective hydroxynitrile lyases, and a general methodology for their use on industrial scale has to be developed.

The highly (*S*)-selective hydroxynitrile lyase from *Hevea brasiliensis* (*HbHNL*) has proven to be particularly suitable for synthesis. This work focused on process aspects for the use of *HbHNL* in enantioselective synthesis.



Publications related to this work

1. U. Hanefeld, A.J.J. Straathof and J.J. Heijnen, Study of the (*S*)-hydroxynitrile lyase from *Hevea brasiliensis*: mechanistic implications. [Biochim. Biophys. Acta **1432** \(1999\) 185-193.](#)
2. W.F. Willeman, U. Hanefeld, A.J.J. Straathof, and J.J. Heijnen, Estimation of kinetic parameters by progress curve analysis for the synthesis of (*R*)-mandelonitrile by *Prunus amygdalus* hydroxynitrile lyase. [Enzyme Microb. Technol, **27** \(2000\) 423-433.](#)
3. U. Hanefeld, G. Stranzl, A.J.J. Straathof, J.J. Heijnen, A. Bergmann, R. Mittelbach and C. Kratky, Electrospray ionization mass spectrometry, circular dichroism and SAXS studies of the (*S*)-hydroxynitrile lyase from *Hevea brasiliensis*. [Biochim. Biophys. Acta **1544** \(2001\) 133-142.](#)
4. U. Hanefeld, A.J.J. Straathof and J.J. Heijnen, Enzymatic formation and esterification of (*S*)-mandelonitrile. [J. Mol. Catal. B. Enzym. **11** \(2001\) 213-218.](#)