

Unnatural Amino Acids

Process for production of natural and non-proteinogenic D- and L-amino acids

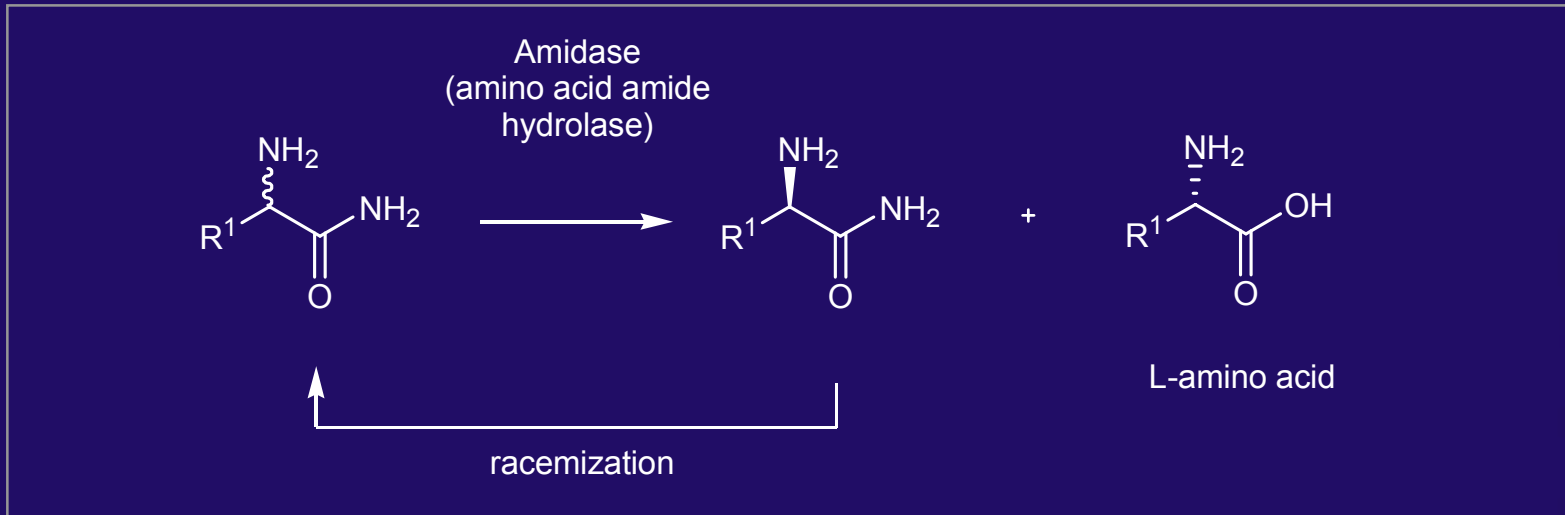
Biocatalysts involved: various **Amidases**, **Hydantoinases** and **Carbamoylases**

Unlimited.

DSM

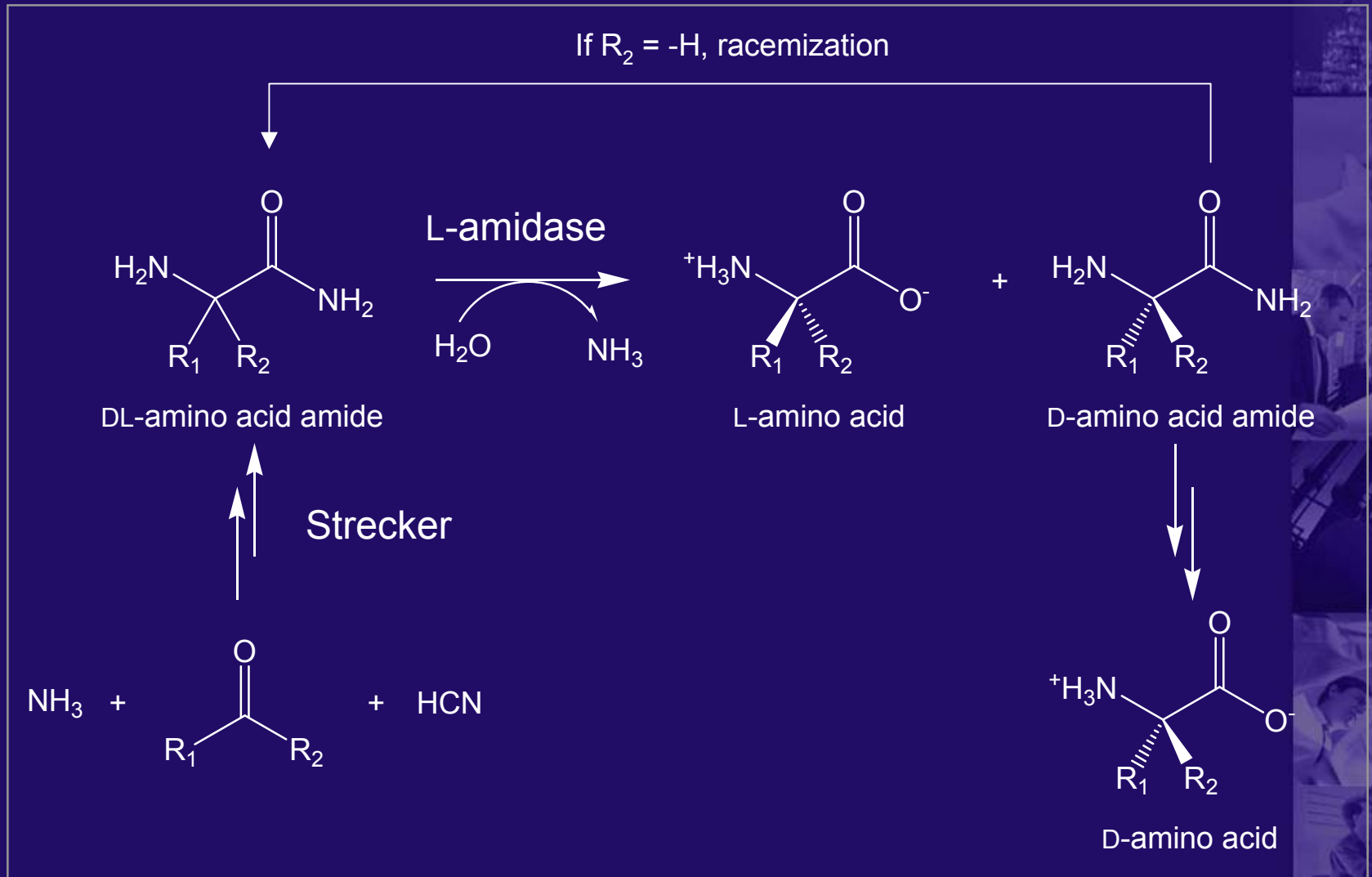


L-Amidases

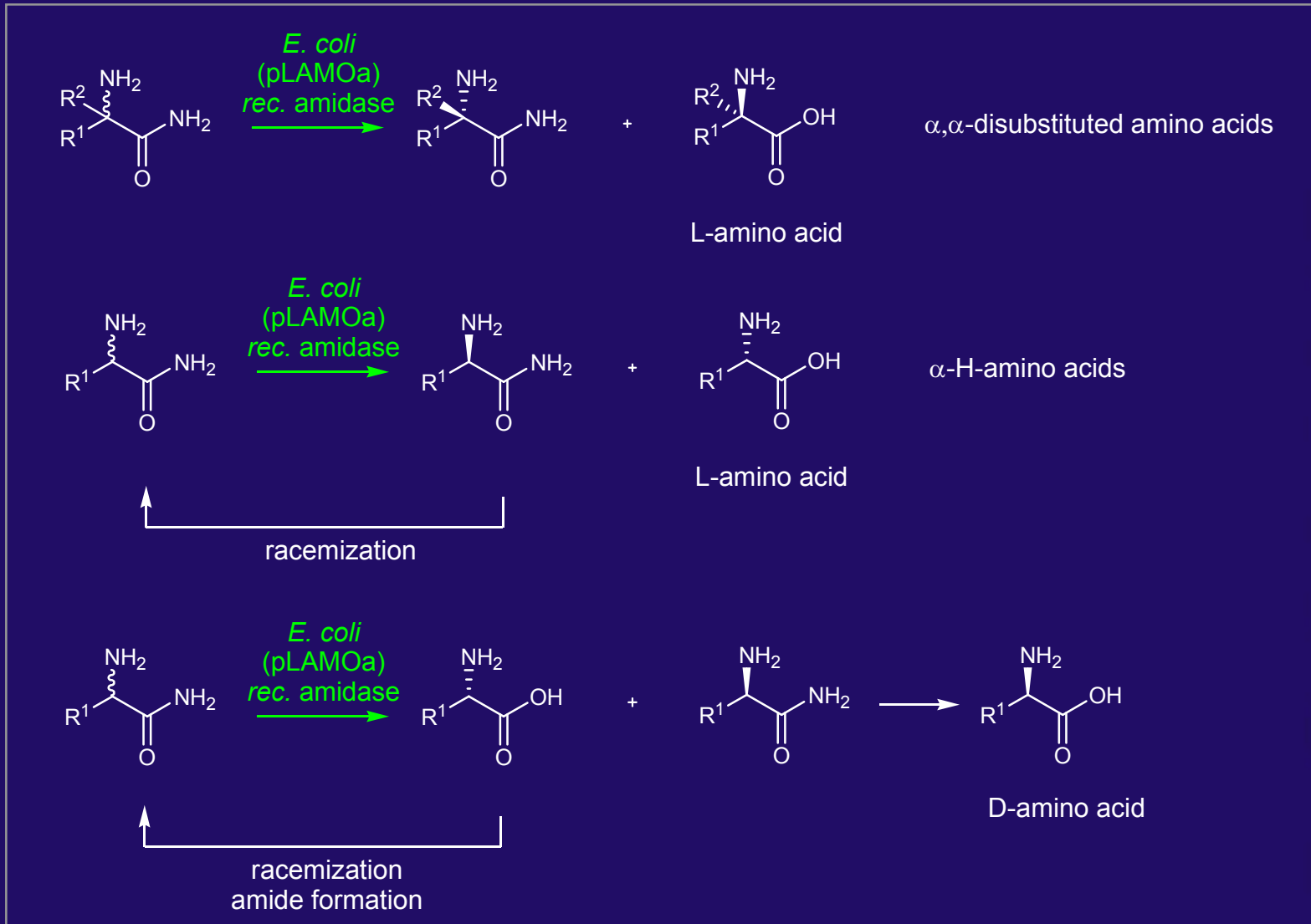


Source	Stereo-Specificity	Substrate Specificity
<i>Pseudomonas putida</i>	S	Very broad, requires α-H
<i>Ochrobactrum anthropi</i>	S	Very broad, accepts α,α -dialkyl

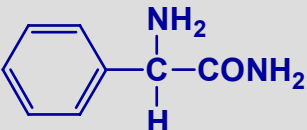
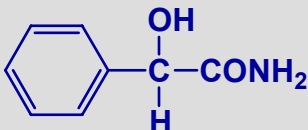
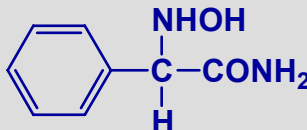
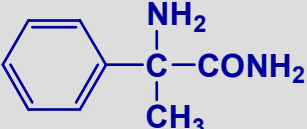
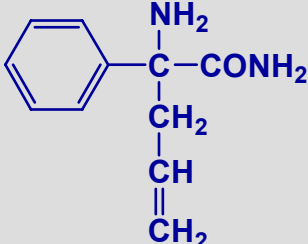
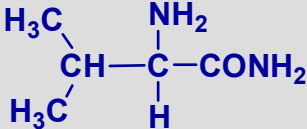
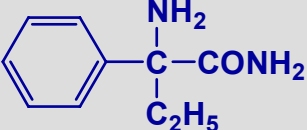
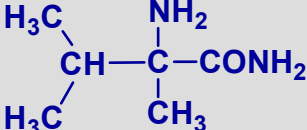
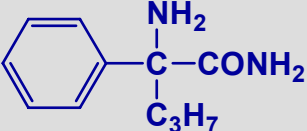
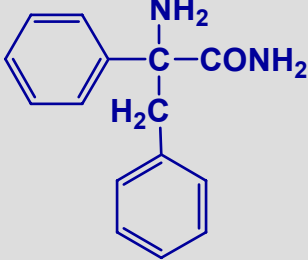
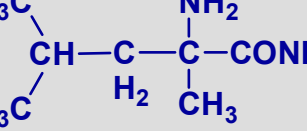
Process for Enantiomerically Pure Amino Acids



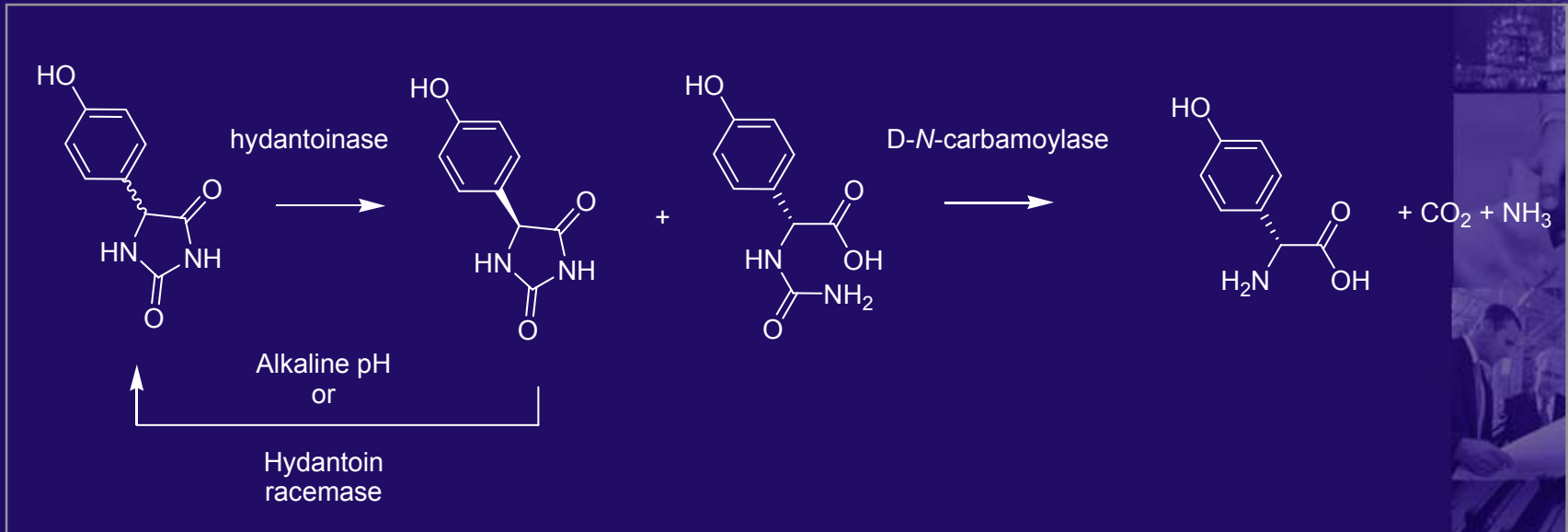
[α,α -disubstituted? Can Do!]



O. anthropi L-Amidase - Substrate Spectrum

Substrate	Act.	Substrate	Act.	Substrate	Act.
 <p>DL-phenylglycine amide</p>	100	 <p>DL-mandelic acid amide</p>	5	 <p>DL-N-hydroxyphenylglycine amide</p>	25
 <p>DL-α-methylphenylglycine amide</p>	2	 <p>DL-α-allylphenylglycine amide</p>	4	 <p>DL-valine amide</p>	25
 <p>DL-α-ethylphenylglycine amide</p>	4			 <p>DL-α-methylvaline amide</p>	5
 <p>DL-α-n-propylphenylglycine amide</p>	1	 <p>DL-α-benzylphenylglycine amide</p>	nd	 <p>DL-α-methylleucine amide</p>	15

D-Hydantoinase / D-N-Carbamoylase



Source	Stereo-Specificity	Substrate Specificity
<i>Agrobacterium radiobacter</i>	<i>R</i>	Broad (Racemization)

D-Phenylalanine process by hydantoinase technology

Features:

- Multi-enzyme conversion
- Enzymatic resolution combined with in-situ racemization of unwanted enantiomer

