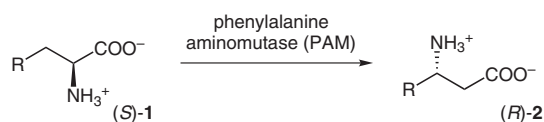
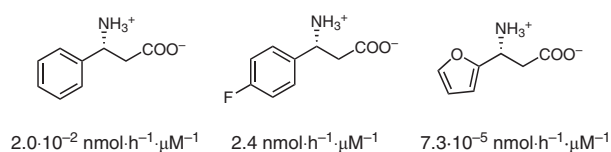


Enzymatic Asymmetric Isomerization of α - to β -Amino Acids



11 examples, catalytic efficiencies: 10^{-5} – 10^1 $\text{nmol}\cdot\text{h}^{-1}\cdot\mu\text{M}^{-1}$



Significance: A biocatalytic asymmetric approach to β -amino acids from the corresponding enantioenriched α -amino acids is reported. Native phenylalanine aminomutase (PAM) from *Taxus* mediates the stereospecific isomerization of (S)- α -arylalanines **1** to (R)- β -arylalanines **2** in varying catalytic efficiencies (six orders of magnitude), depending on the respective substrate. Various aromatic as well as heteroaromatic groups are tolerated.

Comment: Optically active β -amino acids are of great value due to their biological activity as well as their function as chiral building blocks for the synthesis of complex molecules, including β -lactams and β -peptides. While previously described protocols to prepare β -amino- β -arylpropionic acids (**2**) suffer from the requirement of multiple steps (G. Cardillo, C. Tomasini *Chem. Soc. Rev.* **1996**, *25*, 117), the present method involves only one step starting from readily available precursors **1**. A possible extension to the use of aliphatic α -alanine derivatives or racemic starting materials would render the process even more attractive.