ENANTIOSELECTIVE Pd(II)-CATALYZED AMINOCARBONYLATION OF UNSATURATED AMINOALCOHOLS IN THE SYNTHESIS OF GEISSMAN-WAISS LACTONE

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Reaction of the simplest N-protected aminoalcohol 1 in Pd(II)-catalyzed aminocarbonylation gives only one racemic product with syn configuration in high yield [1,2,3].

\[
\begin{align*}
\text{Z-NH} & - \text{OH} \\
1 \ (\pm) & \xrightarrow{\text{Pd balloon}} \text{CO balloon} \\
& \xrightarrow{\text{PdCl}_2 \ (0.1 \ \text{eq.})} \\
& \xrightarrow{\text{CuCl}_2 \ (3 \ \text{eq.})} \\
& \xrightarrow{\text{AcONa \ (3 eq.)}} \\
& \xrightarrow{\text{AcOH, 40°C, 4 hours}} \\
\end{align*}
\]

88% yield only syn isomer

Our effort is to design the asymmetric version of Pd(II)-catalyzed aminocarbonylation as a kinetic resolution of racemic aminoalcohols. The aim is efficient synthesis of the Geissman-Waiss lactone that has been already shown to be effectively transformed into natural products called “necine bases” [4].