Rhodium(I)-Catalyzed Hydroacylation Promoted by Chelating Amines

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CHO
$$\begin{array}{c} Rh(I) \text{ catalyst} \\ \hline 75 - 84\% \\ \hline X = CH, N \\ R = H, \text{ alkyl, Ph} \\ R' = CH_3, \text{ allyl} \\ \hline \end{array}$$

Benzazepines and related nitrogen-heterocycles exhibit a broad range of biological activity. Our goal is to develop syntheses of these compounds that emphasize the efficient use of chemical resources, much of which are derived from petroleum. To this end, rhodium-catalyzed hydroacylation is an attractive strategy due to its inherent atom economy and mild reaction conditions. The chemistry developed in our laboratory exploits chelating allyl amines, which readily undergo hydroacylation and produce the desired compounds in moderate to high yields.