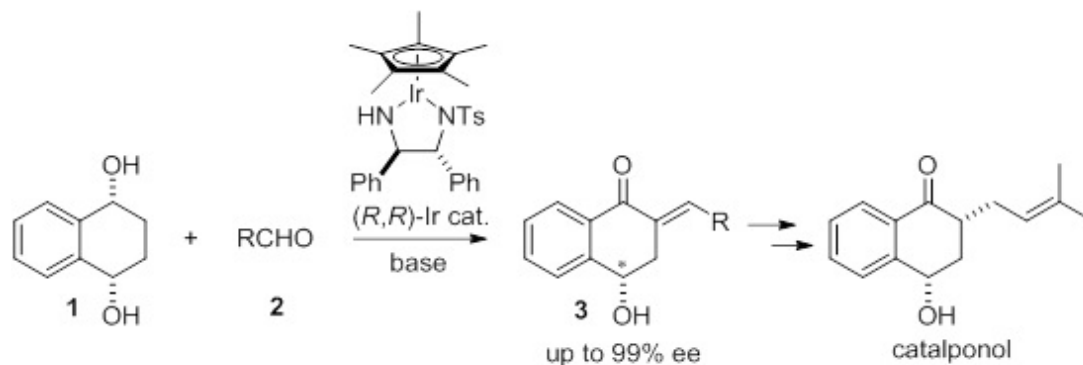


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Ir catalyzed asymmetric tandem reaction of *meso*-diols

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The development of tandem catalytic processes is one of the main subjects for the modern synthetic organic chemistry. Recently we have reported oxidative desymmetrization of *meso*-diols using chiral iridium complex catalysts. The reaction is safe and environmentally benign process without use of stoichiometric amount of heavy metals. We report here that asymmetric tandem coupling of *meso*-diols and an aldehyde using a chiral Ir catalyst. This tandem reaction consists of oxidative desymmetrization of *meso*-diols, aldol condensation with an aldehyde. The reaction of *meso*-diol **1**, benzaldehyde **2** in the presence of a chiral Ir complex (10 mol %) and CsOH in THF gave the desired benzylidene ketone **3** in 82% yield with 96% ee. With the efficient multi-catalytic oxidative desymmetrization of *meso*-diols in hands, we applied this methodology to the synthesis of catalponol. The corresponding dienone was obtained in 87% yield with 99% ee. Finally, catalponol was synthesized by the regio- and stereoselective reduction in good yield.



Biography

Takeyuki Suzuki received his BSc (1989) and MSc (1991) from Hokkaido University, and PhD (1994) from University of Tokyo in 1994 under the direction of Professor Masakatsu Shibasaki. He joined Nagoya University as an Assistant Professor in 1994 and has worked with Professor Ryoji Noyori and then he moved to University of Tokyo in 2000. He has worked as a Lecturer at the Tohoku Pharmaceutical University. From 2003 to 2004, he worked at ETH with Professor Erick M Carreira and then he became an Associate Professor at the Osaka University in 2005. His research interests are in synthetic organic chemistry and asymmetric catalysis.

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