

综述与进展

仿生催化剂——Salen金属络合物催化不对称环氧化烯烃的基础

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摘要 Salen与卟啉、Salen金属络合物与卟啉铁的结构和性质相似, 因此可将Salen金属(Salen-M)络合物认为是仿生催化剂, 它们的仿生性突出表现在不对称催化反应中的高对映异构选择性. 重点介绍了Salen-M络合物催化环氧化烯烃的反应机理, 环氧化物的对映选择性与Salen配位体中的取代基效应(以取代常数 σ_p 表示)之间呈线性关系. 另外, 对映异构选择性的高低还与催化剂配体和底物的结构以及反应条件有关.

关键词 [酶](#) [Salen-M络合物](#) [对映异构选择性](#)

分类号

Bionic Catalyst: Salen-metal Complex Catalyzed Asymmetric Epoxidation of the Olefins

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Abstract The salen and porphyrin have the similar structures and properties, and salen-M and metalloporphyrin complexes have also the similarities. In this review, the salen-M complex was crowned as a bionic catalyst. It is believed that effective stereochemical communication between substrate and enzyme is essential for attaining high enantioselectivity in asymmetric reaction, and most of the successful salen-M catalysts also operate on this principle. According to these, salen-M complex catalyzed asymmetric epoxidation for olefins was discussed in detail, and the linear relationship between enantioselectivities and 5,5'-substituent effect on salen was developed. Moreover, enantioselectivities were still related to the structure of the salen-M complexes and substrates, as well as the reaction conditions.

Key words [enzyme](#) [salen-M complex](#) [enantioselectivity](#)

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