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Synthesis of new chiral phase transfer catalysts and their application in the synthesis of chiral drugs

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Asymmetric phase transfer catalysis is of great importance in organic synthesis, which is widely used in building chiral blocks. Till now the chiral phase transfer catalysts mainly derive from cinchona and Maruoka's C_2-type quarternary ammonium salt, however, the utilization of asymmetric phase transfer catalysis is scarcely explored. First we applied the non-chiral phase transfer catalyst in the synthesis of some drugs and drug intermediates. Then we designed some new phase transfer catalysts according to E. J. Corey's theory of designing the chiral phase transfer catalysts derived from cinchona and synthesized them, after which we explored their application in traditional phase transfer catalysis, then we explored some new phase transfer catalytic reactions with the new catalysts and applied them in the synthesis of chiral drugs and chiral drug intermediates.

Biography

Zhen-ya Dai completed the B. S. in 2000 and the Ph.D. in the department of chemistry in Nanjing University in 2005, he joined Professor Dr. Detlef Heller's group as a postdoctor in the Leibniz Institut fur Katalyse an der Universitat Rostock from 2005 to 2007. Since 2007, he was a teacher in China Pharmaceutical University, and in 2008, he was promoted as an associate professor. Till now, he published 15 articles in reputed journals.

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