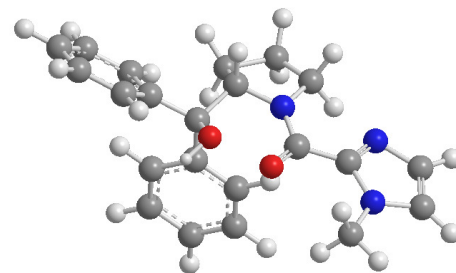


27041 Catalyst for preparation of chiral amines

- “One-pot” two step transformation
- Low catalyst loading
- Trivial catalyst synthesis



The Technology

Many organic, biochemical and biological compounds are chiral (that is they have a structure that cannot be superimposed on its mirror image) which, when used as pharmaceuticals, can differ markedly in their efficacy or toxicity. Additionally, strict regulatory procedures introduced after previous problems with pharmaceutical stereo isomers) now dictate that any chiral compounds (existing as two enantiomeric molecules) must be evaluated in both of these forms. This has led to an enormous global interest in developing new methods and techniques for the production of chiral molecules. Controlling the chirality of the final product using current methods is complicated and involves a great deal of optimisation of many different factors which affect the outcome of the catalytic process, such as the catalyst structure, catalyst loading, solvent, temperature and time. Relatively minor changes in any one of these factors can have a significant and often detrimental effect on the stereo chemical outcome of the reaction. Researchers at the University of Sheffield have developed and optimised new systems for the preparation of chiral amines in almost quantitative yield and as, essentially, one stereoisomer. Their system is also unique since it allows a 'one-pot' two-step transformation, operating efficiently with only 1% of catalyst compared to those reported in the literature, which require 10%. These catalysts also have the advantage of being easily prepared and do not require transition metals, which can be expensive and can contaminate the end product. Work is now underway to broaden the range of input substrates that are amenable to this catalyst.

Intellectual Property

We have filed a patent application which relates to compounds for use as catalysts in chemical reactions including the synthesis of chiral amines.

The Opportunity

There is the opportunity to utilise this technology in a number of ways:

- Improve existing methods to develop pharmaceutical compounds
- Improve existing methods to produce fine chemicals
- Develop new/alternative methods for production of novel chiral compounds

Please contact Andrew Tingey, quoting reference 27041.

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