

Asymmetric Epoxidation Catalyzed By Mn(III)-Fluorous Binaphthyl Schiff Base Complexes

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The research for fluorous binaphthyl chiral complexes which can catalytic asymmetric process has continued to attract considerable interest. The synthesis of chiral manganese complexes bearing perfluoroalkyl ponytails and their use in asymmetric epoxidation reactions are described. Especially, as a procedure for asymmetric epoxidation of alkenes has provided a useful tools for formations of chiral centers with carbon-oxygen bonds.

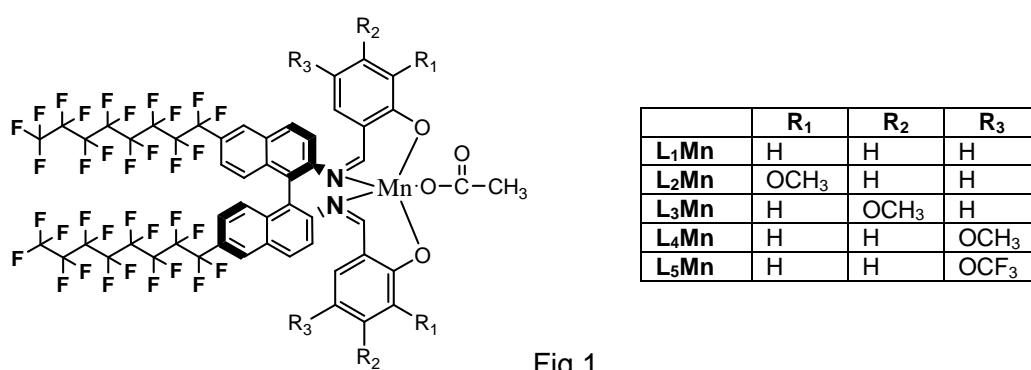


Fig 1.

In this project, scCO₂ soluble new fluorous binaphthyl Schiff-base complexes have been obtained by template effect of 6,6'- diheptadecafluorooktil 2,2'-diamino-1,1' binaftil, various salicylaldehyde and manganese(II)acetate. These Mn(III) complexes have been used in enantioselective epoxidation of styrene using tersiyer butylperoxide.

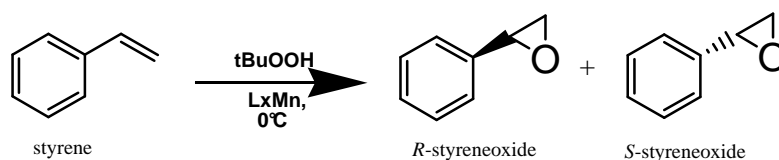


Fig 2.

Table 1. Asymmetric epoxidation of styrene catalysed by L1-5Mn(III) catalysts

	Catalyst	Substrate	Conversion(%)*	Seçicilik (% ee)*
1	L ₁ Mn	Styrene	22	64
2	L ₂ Mn	Styrene	57	74
3	L ₃ Mn	Styrene	55	87
4	L ₄ Mn	Styrene	20	57
5	L ₅ Mn	Styrene	59	81

*0°C, 6 h; 1,04 g styrene, 0,1 g catalyst, 2 mL tBuOOH 10 mL dichlorometan.

REFERENCES:

1. KRISHMAN R., VANCHEESAN S., *Journal of Molecular Catalysis A: Chemical* 157, **2000**, 15-24.
2. CHATTERJEE D., BASAK S., RIAHI A., MUZART J., *Journal of Molecular Catalysis A: Chemical* 255, **2006**, 283.