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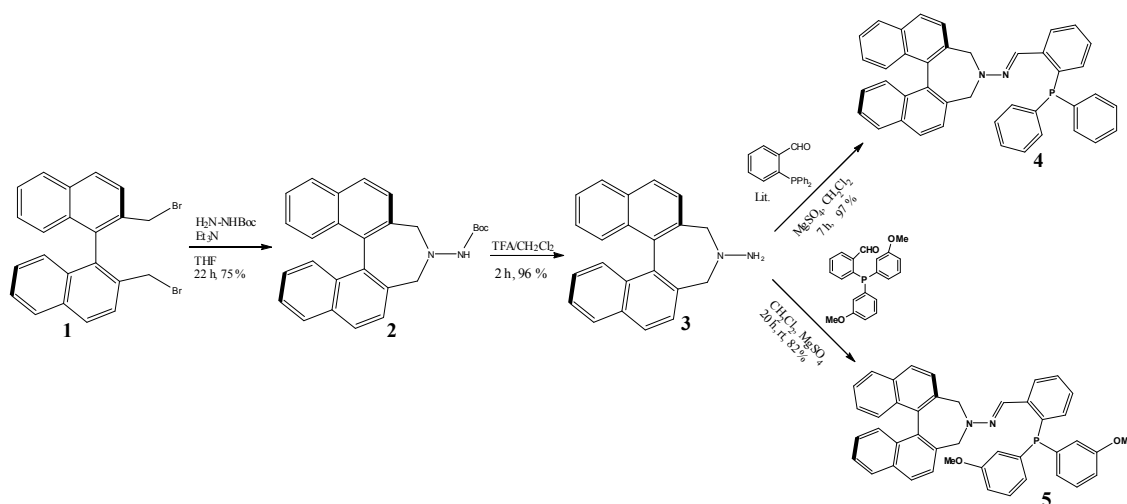
SYNTHESIS OF BINAPHTHYLHYDRAZONE LIGANDS AND THEIR APPLICATION IN ASYMMETRIC SYNTHESIS

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Efficient catalytic asymmetric synthesis is an important field in modern chemistry and therefore many chiral ligands have been introduced aimed at high stereoselectivity [1]. Inspired by the successful use of symmetric 1,1'-binaphthyl moiety in chiral auxiliaries for asymmetric synthesis [2] and by the importance of hydrazones [3], we herein report a synthesis of chiral binaphthylhydrazones (Scheme 1) and demonstrate an application in asymmetric catalysis (Table 1).



Scheme 1. Synthesis of binaphthylhydrazone ligands.

The ability of newly prepared binaphthylhydrazones as the chiral ligand was examined in the palladium catalyzed allylic alkylation of 1,3-diphenylpropenyl acetate with dimethyl malonate, with the desired product obtained in up to 94% ee.

Entry	Ligand	Amount of Ligand	Solvent	Temperature (°C)	Time (h)	Yield (%)	ee (%)
1	4	0,5 eq	Toluene	rt (21)	2,5 h	92%	91%
2	5	0,5 eq	Toluene	rt (21)	4 h	88%	94%
3	4	0,5 eq	Toluene	40	30 min	89%	89%

Table 1. Enantioselective allylic alkylation

References

1. R. Noyori, *Asymmetric Catalysis in Organic Synthesis*, Wiley: New York, 1994.
2. M. Widhalm, U. Nettekoven, K. Mereiter, *Tetrahedron: Asymm.*, **10**, (1999), 4369.
3. D. Enders, *Asymmetric Synthesis*, Vol 3 (Ed.: J. D. Morrison), Academic Press: Orlando, 1984.