



The authors are indebted to the Razi University Research Council for financial support and to Mr K. Ghodrati for preparing some of the disulfides used.

Received 4 November 2000; accepted 30 November 2000  
Paper 00/576

## References

- (a) T.C. Bruice, *Organic Sulfur Compounds*, N. Kharasch (ed.), Pergamon press, New York and London, 1961, Vol. 1, chapt 35; (b) T.C. Bruice and S.J. Benkovic, *Bioorganic Mechanism*, Benjamin Inc., New York and Amesterdam, 1966, Vol. 1, chapt 3.
- J. Mukaiyama, M. Araki and H. Takei, *J. Am. Chem. Soc.*, 1973, **95**, 4763.
- (a) G. McGarvey, *J. Am. Chem. Soc.*, 1986, **108**, 4943; (b) R. Corow and P. Portoghese, *J. Org. Chem.*, 1986, **51**, 938.
- (a) S. Kobayashi, H. Uchiro, Y. Fujishita, I. Shiina and T. Mukaiyama, *J. Am. Chem. Soc.*, 1991, **113**, 4247; (b) K.H. Suh and D.J. Choo, *Tetrahedron Lett.*, 1995, **36**, 6109.
- T. J. Buch, *Tetrahedron*, 1977, **33**, 3041.
- S. Masamune, Y. Hayase, W. Schilling, W. K. Chan and G.S. Bates, *J. Am. Chem. Soc.*, 1977, **99**, 6756, and references cited therein.
- (a) F. Isao, T. Naomi. and H. Shizunobu, *Chem. Express*, 1989, **4**, 337; (b) J.Y. Gauthier, F. Bourdon and N. Young, *Tetrahedron Lett.*, 1986, **27**, 15; (c) P. Giovanni, N. Marino, G. Giacomo and F. Marcos, *Tetrahedron*, 1989, **45**, 7411; (d) Y.V. Gulevich, N.A. Bumagin and Z.P. Beletskaya, *Zh. Org. Khim.*, 1988, **24**, 2126; (e) B. Ramon, G. Jordi and V. Jaume, *Synthesis*, 1989, **4**, 305; (f) A. Shlomo and A. Howard, *Organometallics*, 1986, **5**, 596; (g) C. Cardellicchio, V. Fiandanese, G. Marchese and L. Ronzini, *Tetrahedron Lett.*, 1985, **26**, 3595; (h) A. Saeed and I. Javed, *ibid*, 1986, **27**, 3791; (i) R.P. Hatch and S.M. Weinreb, *J. Org. Chem.*, 1977, **42**, 3960; (j) K. Sucheta, G.S. Reddy, D. Ravi and N.R. Rao, *Tetrahedron Lett.*, 1994, **35**, 4415; (k) X. Jia, Y. Zhang and X. Zhou, *ibid*, 1994, **35**, 8833; (l) A.L. Braga, O.E.D. Rodrigues, E.D. Avila and C.C. Silveira, *ibid*, 1998, **39**, 3395; (m) H.-J. Liu and S. I. Sabesan, *Can. J. Chem.*, 1980, **58**, 2645; (n) H.M. Meshram, G.S. Reddy, K.H. Bindu and J.S. Yadav, *Synlett*, 1998, 877.
- B. Movassagh, M.M. Lakouraj and Z. Fadaei, *J. Chem. Res. (S)*, 2000, 350.
- H.-U. Reissig and B. Scherer, *Tetrahedron Lett.*, 1980, **21**, 4259.
- T. Mukaiyama, M. Miyashita and I. Shiina, *Chem. Lett.*, 1992, 1747.
- G.H. Berezin and G.H. Harris, *U.S. Pat. 3219679*, 1965; *C. A.*, 1966, **64**, 8098a.
- J. Morgenstern and R. Mayer, *Z. Chem.*, 1968, **8**, 146.
- T. Takido, K. Sato, T. Nakazawa and M. Seno, *Sulfur Lett.*, 1995, **19**, 67.
- L.H. Noda, S.A. Kuby and H.A. Lardy, *J. Am. Chem. Soc.*, 1953, **75**, 913.