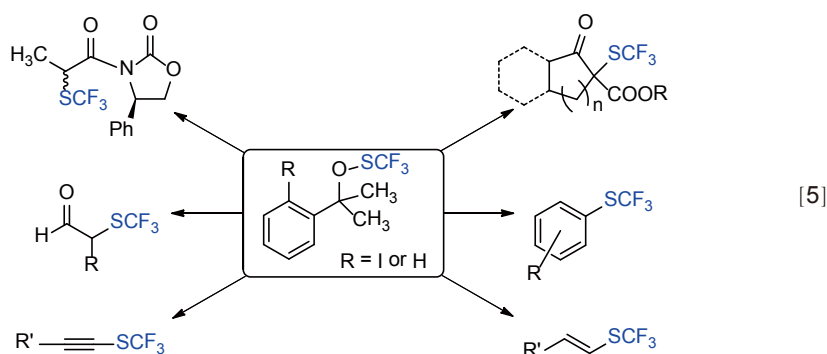


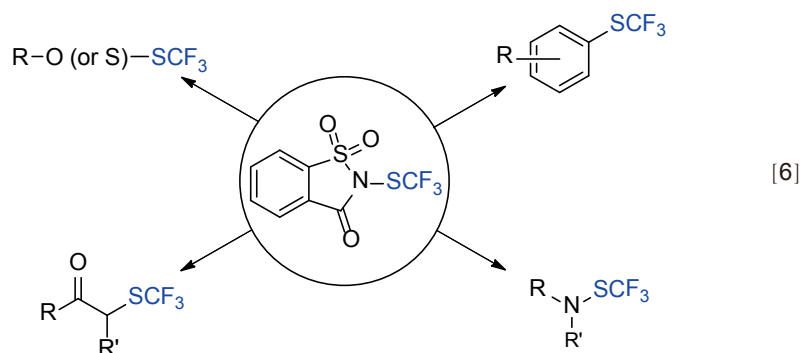
The trifluoromethylthio group ($\text{CF}_3\text{S}-$) represents one of the most lipophilic substituents. It is well known that incorporation of the trifluoromethylthio group into small molecules greatly enhances their ability to cross lipid membranes and their in vivo absorption rate^[1]. In addition, the high electronegativity of the $\text{CF}_3\text{S}-$ group significantly improves the small molecule's stability in acidic environments. Thus, the trifluoromethylthio group has drawn special attention from the pharmaceutical and agrochemical industries for its use in isostere-based drug design^[2,3].

J&K offers trifluoromethylthiolating reagents developed by Qilong Shen's group at Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences. There are two types of these new electrophilic reagents: trifluoromethanesulfenates (Lu-Shen reagent) and N-trifluoromethylthiosaccharin (Shen reagent). Systematic studies have shown that both types of reagents are highly reactive toward a wide range of nucleophiles, yet the substrate scope of these reagents is complementary^[4].

■ Trifluoromethanesulfenates (Lu-Shen Reagent)



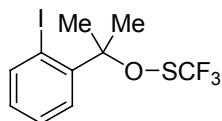
■ N-Trifluoromethylthiosaccharin (Shen Reagent)



References

- [1] Shao, X. X.; Xu, C. F.; Lu, L.; Shen, Q. *Acc. Chem. Res.* **2015**, 48, 1227
- [2] Shao, X. X.; Wang, X. Q.; Yang, T.; Lu, L.; Shen, Q. *Angew. Chem. Int. Ed.* **2013**, 52, 3457.
- [3] Wang, X.-Q.; Yang, T.; Cheng, X. L.; Shen, Q. *Angew. Chem. Int. Ed.* **2013**, 52, 12860.
- [4] Hu, F.; Shao, X. X.; Zu, D. H.; Lu, L.; Shen, Q. *Angew. Chem. Int. Ed.* **2014**, 53, 6105.
- [5] Shao, X. X.; Xu, C. F.; Lu, L.; Shen, Q. *J. Org. Chem.* **2015**, 80, 3012.
- [6] Xu, C. F.; Ma, B. Q.; Shen, Q. *Angew. Chem. Int. Ed.* **2014**, 53, 9316.

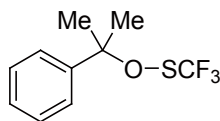
1784571



1584705-82-7

3,3-Dimethyl-1-(Trifluoromethylthio)-
1,2-benziodoxole

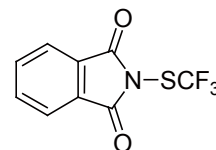
1784574



1640084-14-5

(2-Phenylpropan-2-yloxy)(trifluoromethyl)
sulfane

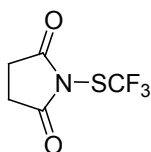
1784566



719-98-2

2-(Trifluoromethylthio)isoindoline-1,3-
dione

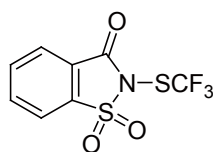
1784565



183267-04-1

1-(Trifluoromethylthio)pyrrolidine-2,5-
dione

1784567



1647073-46-8

N-Trifluoromethylthiosaccharin