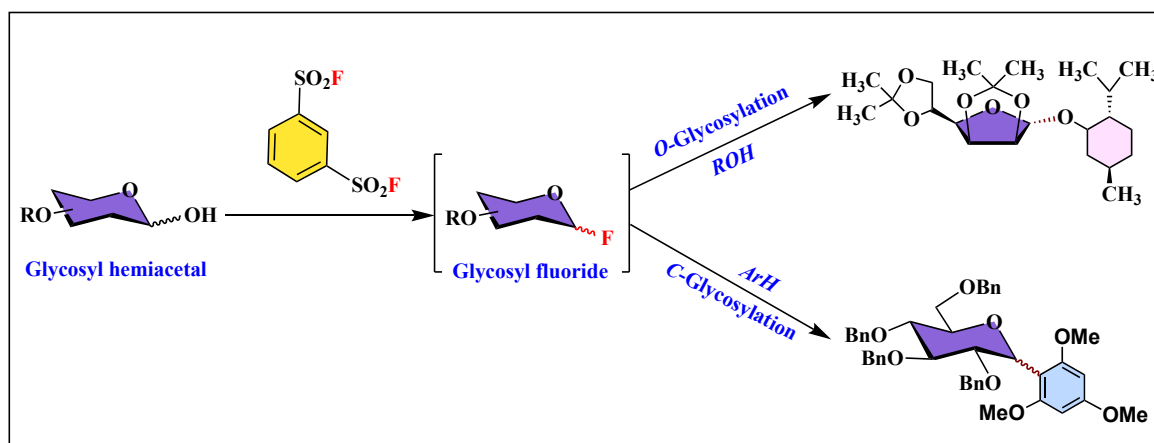


DEOXYFLUORINATED SYNTHESIS OF GLYCOSYL FLUORIDES

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Glycosyl halides are classical glycosylation donors widely employed by carbohydrate chemists. Among these, glycosyl fluorides are particularly notable as versatile donors due to their exceptional thermal and moisture stability. The discovery of glycosyl fluoride-based glycosylation has driven significant advancements in glycoscience, allowing the investigation of the molecular roles of glycans in health and disease. However, the synthesis of fluoro-glycosides under mild conditions remains challenging and is in high demand. We have developed benzene-1,5-disulfonyl fluoride as a deoxyfluorinating reagent to synthesize glycosyl fluorides from glycosyl hemiacetals under mild conditions. This approach enables the efficient synthesis of various fluoro-glycosides from glycosyl hemiacetals, including disaccharides and 2-deoxy sugar derivatives. This method is compatible with various functional groups and provides a simple and effective route to produce a straightforward synthesis of both O-glycosides and C-glycosides.



References:

1. (a) Dey, S.; Thakur, S.; Sau, A., *Trends In Carbohydrate Research* **2024**, 16, 118-142. (b) Yokoyama, M., *Carbohydr. Res.* **2000**, 327 (1-2), 5-14.
2. (a) Dey, S.; Dwivedi, S.; Giri, D.; Sau, A., *Org. Lett.* **2024**, 26 (48), 10351-10355. (b) Neeliveettil, A.; Dey, S.; Nomula, V.; Thakur, S.; Giri, D.; Santra, A.; Sau, A., *Chem. Commun.* **2024**, 60 (36), 4789-4792.