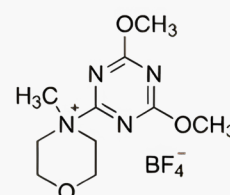


DMTMM BF₄ Applications

DMTMM BF₄ (4-(4,6-Dimethoxy-1,3,5-triazin-2-yl)-4-methylmorpholinium tetrafluoroborate) is a water-soluble organic triazine derivative widely used to activate carboxylic acids for amide synthesis. As one of the most common reactions in organic chemistry, amide coupling is efficiently facilitated by DMTMM under mild conditions. Its mechanism aligns with other established amide coupling reactions but offers advantages in solubility and selectivity. In the development of Antibody–Drug Conjugates (ADCs) and Peptide–Drug Conjugates (PDCs), DMTMM BF₄ supports precise, efficient, and gentle conjugation, making it a valuable tool for complex bioconjugation workflows.



CAS No.: 293311-03-2

Application Area	Example Use	Advantage of DMTMM BF ₄	Key References
Peptide synthesis	Amide bond formation between amino acids	High yield, low racemization, works in water	Kunishima et al., Tetrahedron (1999)
Nucleic acid chemistry	DNA/RNA labeling with fluorophores or drugs	Mild, aqueous conditions preserve nucleic acids	Ficht et al., Bioconjug. Chem. (2014)
Protein/enzyme conjugation	PEGylation, biotinylation, fluorescent dye labeling	Retains protein activity; efficient in aqueous buffers	Hanayama & Hashimoto, Bioconjug. Chem. (2006)
Drug discovery / bioconjugates	Antibody–drug conjugates, peptide–drug linkers	Reliable amide bond formation; avoids carbodiimide side reactions	Dirksen & Dawson, Bioconjug. Chem. (2008)
Polymer & biomaterials modification	Functionalization of hydrogels or polymers with peptides/proteins	Enhances biocompatibility and drug delivery features	Obara et al., Biomaterials (2005)
Carbohydrate chemistry	Coupling sugars to amines for glycoconjugates	Useful in glycobiology and vaccine research	Yuasa et al., J. Org. Chem. (2012)



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