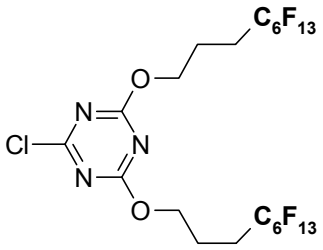


F26-CDMT

2-Chloro-4,6-bis[(perfluorohexyl)propyloxy]-triazine

Chemical Formula: $C_{21}H_{12}ClF_{26}N_3O_2$

Formula Weight: 877.78

Description: Activation of Carboxylic Acids for Coupling

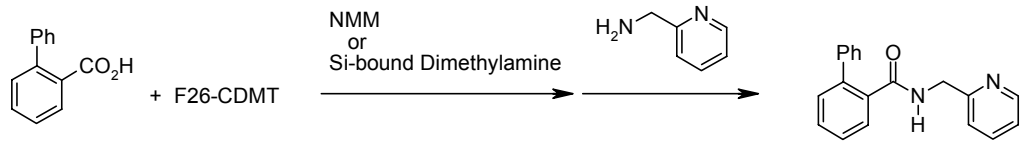
Appearance: Pale yellow powder

Soluble in: THF, DCM

DESCRIPTION AND USES:

- F26-CDMT[1] is a fluorous version of CDMT (2-chloro-4,6-dimethoxy-1,3,5-triazine) that was developed by Kaminski[2] as an coupling reagent to form amides.
- It is known to give good to high yields of coupling products between sterically hindered substrates.[1]

TYPICAL PROCEDURE: Amide formation reaction



1. **Amide formation reaction with resin-bound carbonate (MP-CO_3) workup**: To a vial that contained 2-biphenylcarboxylic acid (51 mg, 0.26 mmol, 1.3 equiv) was added a solution of 2-(aminomethyl)pyridine (22 mg, 0.20 mmol, 1.0 equiv) in THF (1 mL). F26-CDMT (0.27 g, 0.31 mmol, 1.5 equiv) was added as powder, and then N-methylmorpholine(NMM)(0.06 mL, 0.55 mmol, 3 equiv) was added. The reaction was monitored by LC-MS. Upon completion of the reaction, MP-CO_3 (Argonaut Technologies, loading = 2.9 mmol, 0.44 g, 1.3 mmol, 6 equiv) was added, and the mixture was stirred vigorously with a small magnetic stirring bar for 1 h. The MP-CO_3 resin was removed by filtration, and it was rinsed with DCM (3 x 3 mL). The filtrates were combined, and the solvent was removed at a reduced pressure. The residue was dissolved in DCM (1 mL) and loaded on top of a 5g F-SPE cartridge[3] that was conditioned with 80:20 MeOH:H_2O. The desired product was eluted with 80:20 MeOH:H_2O (12 mL) to give 42 mg (0.15 mmol, 72% yield) of 2-(pyridyl)methyl 2-biphenylcarboxamide after removal of the solvent.

2. **Amide formation reaction with a silica-gel bound base**: To a vial that contains silica-bound dimethylamine (Silicycle, loading = 1.5 mmol/g, 0.44 g, 0.66 mmol) was added DCM (2 mL), 2-biphenylcarboxylic acid (22 mg, 0.12 mmol, 1.2 equiv), and F26-CDMT (0.133 g, 1.3 equiv). The mixture was stirred vigorously with a small stirring bar for ½ h, and then 2-(aminomethyl)pyridine (10.5 mg, 0.10 mmol) in DCM (1 mL) was added. The reaction was monitored by LC-MS. Upon completion of the reaction, the silica-bound base was filtered off, and then the filtrate was concentrated at a reduced pressure. The residue was dissolved in DCM (1 mL), and then it was loaded on top of a 5g F-SPE cartridge[3] that was conditioned with 80:20 MeOH:H_2O. The product was eluted with 80:20 MeOH:H_2O (12 mL) to give 21 mg (0.074 mmol, 76% yield) of 2-(pyridyl)methyl 2-biphenylcarboxamide after removal of the solvent.

REFERENCES:

1) Markowicz, M. W.; Dembinski, R. *Synthesis* **2004**, 80.

2) (a) Kaminski, Z. J. *Tetrahedron Lett*. **1985**, *26*, 2901. (b) Kaminski, Z. J.; Paneth, P.; Rudzinski, J. *J. Org. Chem.* **1998**, *63*, 4248.

3) Please refer to FTI Application Note "Fluorous Solid Phase Extraction".

20041102