Product Data Sheet

Product Name: 2-Chlorotrityl Chloride Resin
Cat. No.: GA10388

Chemical Properties

Cas. No.		
Formula	M.Wt	
Solubility	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.	
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.	
Structure	2-Chlorotrityl Chloride Resin	

Protocol

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1.□□□DCM: DMF □30mL, 1:1□□□□Fmoc-Cys (Trt)-OH □1170mg, 2mmol□□DIPEA □1mL□□□□2- ctc□□□□□□□□□2h□

2.□□□□□DCM / MeOH / DIPEA (17:2:1□20mL)□□30min□

3.□DCM □1 × 10mL□□DMF □2 × 20mL□□□□□

4.10%□□□DMF□100ml□□□□□□□□□fmoc□□□30min□

5.□DMF □4 × 20mL□□□□

6.□10mL DCM□□Fmoc-Gly-OH □600mg, 2.01mmol□□HATU □650mg, 1.7mmol□□DIPEA □0.5mL□□□□□□□□□□□□□□□□□□□□2h□

7.□□□□□□□DMF □2 ×10mL□□□□□□

8.□10%□□□DMF □100ml□□□□□□30min□

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9.□DMF □4 × 20mL□□□□□□□□

10.□□□□□□□□□□□Fmoc-Phe-OH, Fmoc-Pro-OH, Fmoc-Tyr (tBu)-OH, Fmoc-Phe-OH and Fmoc-Cys (Trt) - OH□□□□□□□□□□□□□□□□□□

11.□1%□TFA□DCM□□□□□□□□□□□□□□□□□

12.□4%□□□□CH3OH□□□□□□□□□

13.□□□□□□□□□□□□□□□□□

14.□□□□□□□□□

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References:
[1]HoushdarTehrani, Mohammad Hassan et al. "Synthesis of Linear and Cyclic Disulfide Heptapeptides of Longicalycinin A and Evaluation of Toxicity on Cancerous Cells HepG2 and HT-29." *Iranian journal of pharmaceutical research : IJPR* vol. 17,3 (2018): 956-963.

Background

2-Chlorotrityl Chloride Resin (2-CTC resin) is a versatile, acid-labile resin used in the chemical synthesis of peptides using a Fmoc-amino acid/carboxyl-linked protocol for the solid phase immobilization of carboxylic acids, alcohols, phenols, and amines, imidazoles, and hydroxylamines[1]. The conditions of solid phase immobilization release (resin cleavage) are achieved using 1-50% TFA in DCM containing 5% TIS, carboxylic acids can also be cleaved from this support with AcOH/TFE/DCM,0.5% TFA in DCM, or HFIP in DCM[2] [3].

2-Chlorotrityl Chloride Resin act as a temporary and reusable protecting group in facile synthesis of Fmoc-N-Me-AA-OH (150mg, see citation for protocol and condition)[4], synthesis of cathepsin-B cleavable linkers (see citation for protocol and condition)[5], and synthesis of linear and cyclic disulfide heptapeptides of longicalycinin A (see citation for protocol and condition)[6].

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References:
[1] Hoekstra, W J. “The 2-chlorotrityl resin: a worthy addition to the medicinal chemist's toolbox.” *Current medicinal chemistry* vol. 8,6 (2001): 715-9. doi:10.2174/0929867013373192
[2] Al Musaimi, Othman et al. “Greener Cleavage of Protected Peptide Fragments from Sieber Amide Resin.” *ChemistryOpen* vol. 11,12 (2022): e202200236. doi:10.1002/open.202200236
[3] Bollhagen, Ralf, et al. "A new reagent for the cleavage of fully protected peptides synthesised on 2-Chlorotrityl Chloride Resin." *Journal of the Chemical Society, Chemical Communications* 22 (1994): 2559-2560.
[4] Román, Tanya et al. “Protocol for Facile Synthesis of Fmoc-N-Me-AA-OH Using 2-CTC Resin as Temporary and Reusable Protecting Group.” *Methods and protocols* vol. 6,6 110. 13 Nov. 2023, doi:10.3390/mps6060110
[5] Pryyma, Alla et al. “Rapid, High-Yielding Solid-Phase Synthesis of Cathepsin-B Cleavable Linkers for Targeted Cancer Therapeutics.” *Bioconjugate chemistry* vol. 31,12 (2020): 2685-2690. doi:10.1021/acs.bioconjchem.0c00563
[6]HoushdarTehrani, Mohammad Hassan et al. “Synthesis of Linear and Cyclic Disulfide Heptapeptides of Longicalycinin A and Evaluation of Toxicity on Cancerous Cells HepG2 and HT-29.” *Iranian journal of pharmaceutical research : IJPR* vol. 17,3 (2018): 956-963. doi:10.1089/sur.2020.189

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