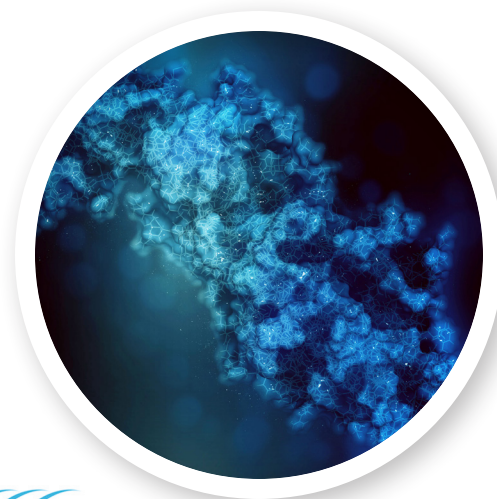




Cambridge Isotope Laboratories, Inc.  
isotope.com

# Preloaded Resins

For Solid-Phase Synthesis of  
Stable Isotope-Labeled  
Tryptic Peptides



Through collaboration with New England Peptide, Inc. (NEP), CIL is pleased to offer synthesis-ready preloaded resins to aid the solid-phase synthesis of stable isotope-labeled tryptic peptides. These 2-chlorotrityl (2-CITrt) resins, originally introduced by Barlos and coworkers,<sup>1</sup> are ideal for the synthesis of isotopically labeled tryptic peptides for use in stable isotope dilution mass spectrometry (IDMS) assays for protein quantitation. The resins are prepared from labeled, protected amino acids with the highest chemical, isotopic, and chiral purity available. Additionally, because enantiomerization does not occur during the loading of 2-CITrt resin,<sup>2</sup> peptides containing C-terminal-labeled-arginine (Pbf) or labeled-lysine (BOC) residues can be produced essentially free from contamination by diastereomeric side-products.

2-CITrt resins are excellent supports for use in standard solid-phase peptide synthesis protocols. Final cleavage of the peptides from the resin with standard trifluoroacetic acid-based cocktails leads to fully deprotected peptide C-terminal acids terminated with an isotopically labeled arginine ( $\Delta m = +10$  amu) or lysine ( $\Delta m = +8$  amu). Alternative mild acid protocols<sup>3</sup> can provide isotopically labeled, protected peptide fragments.

## References

1. Barlos, K.; Gatos, D.; Kallitsis, J.; et al. **1989**. Synthesis of protected peptide fragments using substituted triphenylmethyl resins. *Tetrahedron Lett*, *30*, 3943-3946.
2. Fujiwara, Y.; Akaji, K.; Kiso, Y. **1994**. Racemization-free synthesis of C-terminal cysteine-peptide using 2-chlorotrityl resin. *Chem Pharm Bull*, *42*(3), 724-726.
3. Barlos, K.; Gatos, D. **1999**. 9-Fluorenylmethyloxycarbonyl/tButyl-based convergent protein synthesis. *Biopolymers*, *51*(4), 266-278.

## Product Description

The resin is prepared from the highest quality cross-linked polystyrene (1% divinylbenzene) with the 2-chlorotrityl linkage directly attached to the support.

**Loading:** 0.25-0.5 mmol/g; copoly (styrene-1% DVB)

**Particle size:** 100-200 mesh (74-149  $\mu\text{m}$ )

**Reagent:** Labeled amino acid with Fmoc or Boc protecting group (e.g.,  $^{13}\text{C}_6$ / $^{15}\text{N}_4$  Arg Fmoc – CNLM-8474-H)

**Isotope enrichment:** >99%

**Chiral purity:** >99%

Catalog No.	Description	Mass Shift from Unlabeled (Da)
SRPR-Ala-D	Preloaded resin L-Ala-N-Fmoc (3,3,3-D <sub>3</sub> , 98%) – 2-CITrt resin	+3
SRPR-Arg-CN	Preloaded resin L-Arg-N-Fmoc, PBF-OH ( $^{13}\text{C}_6$ , 99%; $^{15}\text{N}_4$ , 99%) – 2-CITrt resin	+10
SRPR-Lys-CN	Preloaded resin L-Lys- $\alpha$ -N-Fmoc, $\epsilon$ -N-t-Boc ( $^{13}\text{C}_6$ , 99%; $^{15}\text{N}_2$ , 99%) – 2-CITrt resin	+8
SRPR-Tyr-CN	Preloaded resin L-Tyr-N-Fmoc, O-t-butyl ether ( $^{13}\text{C}_9$ , 99%; $^{15}\text{N}$ , 99%) – 2-CITrt resin	+10

Please inquire for pricing and unit sizes.

Please contact us if an alternate preloaded resin is of interest.

Chemical purity (CP) is  $\geq 98\%$ , unless otherwise specified. For research use only. Not for use in diagnostic procedures.

