



Cambridge Isotope Laboratories, Inc.
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RESEARCH PRODUCTS

SILAC Reagents and Sets

Stable Isotope Labeling by Amino Acids in Cell Culture

Stable isotope incorporation into protein has proven to be a powerful technology for quantitatively comparing the proteomes of multiple samples. Although isotopes can be incorporated metabolically or chemically, the SILAC method (utilizes metabolic incorporation) has emerged as one of the most powerful techniques for MS-based quantitative applications (see references on reverse).

Cambridge Isotope Laboratories, Inc. (CIL) is pleased to offer the following products for SILAC-based, quantitative proteomic studies.

Amino Acids

L-Arginine (L-Arg)

Catalog No.	Description	Shift from Unlabeled
CLM-2265-H*	L-Arginine-HCl ($^{13}\text{C}_6$, 99%)	+6 Da
CNLM-539-H*	L-Arginine-HCl ($^{13}\text{C}_6$, 99%; $^{15}\text{N}_4$, 99%)	+10 Da
ULM-8347	L-Arginine-HCl (unlabeled)	N/A

L-Lysine (L-Lys)

Catalog No.	Description	Shift from Unlabeled
CLM-2247-H*	L-Lysine-2HCl ($^{13}\text{C}_6$, 99%)	+6 Da
DLM-2640	L-Lysine-2HCl (4,4,5,5- D_4 , 96-98%)	+4 Da
DLM-2641	L-Lysine-2HCl (3,3,4,4,5,5,6,6- D_8 , 98%)	+8 Da
CNLM-291-H*	L-Lysine-2HCl ($^{13}\text{C}_6$, 99%; $^{15}\text{N}_2$, 99%)	+8 Da
ULM-8766	L-Lysine-2HCl (unlabeled)	N/A

L-Leucine (L-Leu)

Catalog No.	Description	Shift from Unlabeled
CLM-2262-H*	L-Leucine ($^{13}\text{C}_6$, 99%)	+6 Da
DLM-1259	L-Leucine (5,5,5- D_3 , 99%)	+3 Da
CNLM-281-H*	L-Leucine ($^{13}\text{C}_6$, 99%; ^{15}N , 99%)	+7 Da
ULM-8203	L-Leucine (unlabeled)	N/A

*H denotes highly enriched amino acid (i.e., 99%).

Chemical purity (CP) is 98% or greater, unless otherwise indicated.
For research use only. Not for use in diagnostic procedures.

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Applications

- Peptide/protein identification
- Protein expression profiling (i.e., normal vs. disease cells)
- Signaling pathway evaluation
- Relative protein quantification

L-Valine (L-Val)

Catalog No.	Description	Shift from Unlabeled
CLM-2249-H*	L-Valine ($^{13}\text{C}_5$, 99%)	+5 Da
DLM-488	L-Valine (D_8 , 98%)	+8 Da
ULM-8202	L-Valine (unlabeled)	N/A

*H denotes highly enriched amino acid (i.e., 99%).

Amino Acid Bundling Sets New!

SILAC 2-Plex (2-Plex SILAC Amino Acid Standards)[†]

Type	Abbreviated Compounds (Catalog Numbers)
Light (L)	Unlabeled L-Arg (ULM-8347) and Unlabeled L-Lys (ULM-8766)
Heavy (H)	$^{13}\text{C}_6$, $^{15}\text{N}_4$ L-Arg (CNLM-539-H) and $^{13}\text{C}_6$, $^{15}\text{N}_2$ L-Lys (CNLM-291-H)

SILAC 3-Plex (3-Plex SILAC Amino Acid Standards)[†]

Type	Abbreviated Compounds (Catalog Numbers)
Light (L)	Unlabeled L-Arg (ULM-8347) and Unlabeled L-Lys (ULM-8766)
Medium (M)	$^{13}\text{C}_6$ L-Arg (CLM-2265-H) and D_4 L-Lys (DLM-2640)
Heavy (H)	$^{13}\text{C}_6$, $^{15}\text{N}_4$ L-Arg (CNLM-539-H) and $^{13}\text{C}_6$, $^{15}\text{N}_2$ L-Lys (CNLM-291-H)

[†]Each amino acid in the 2-plex and 3-plex standard sets is supplied in 0.1 g units.

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Other Products of Interest

Methionine (Met) Surrogates

L-Azidohomoalanine-HCl (light, AHA; heavy, hAHA) and L-azidonorleucine-HCl (ANL) can be used to evaluate the synthesis and turnover of newly synthesized proteins *in vivo* through targeted or untargeted MS analysis (e.g., Yates JR et al. JPR 2015). CIL is pleased to offer AHA, hAHA, and ANL for use in SILAC applications. Please inquire for pricing.

Catalog No.	Description
CNLM-9461	L-Azidohomoalanine-HCl (1,2,3,4- ¹³ C ₄ , 99%; 2,4- ¹⁵ N ₂ , 98%)
ULM-9460	L-Azidohomoalanine-HCl (unlabeled)
ULM-10989	L-Azidonorleucine-HCl (unlabeled) CP 97%

Chemical purity (CP) is 98% or greater, unless otherwise specified.

Example References

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