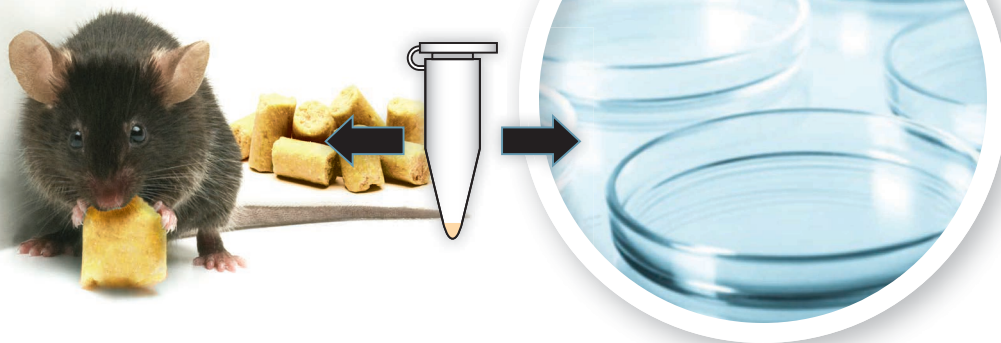# L-Azidohomoalanine·HCl

For Newly Synthesized Protein Analysis

Azidohomoalanine (AHA) is a stable, non-toxic, non-canonical amino acid. This substrate readily replaces methionine (Met) during protein synthesis and is therefore ideally suited for evaluating newly synthesized proteins (NSPs) in cell culture and *in vivo*. NSPs are of importance as they have the potential to identify regulatory or expression changes associated with disease states or perturbations. To date, unlabeled AHA has been predominantly incorporated into proteins of cells,[1-3] tissues,[4-6] and organisms in its unlabeled form.[7-9] However, heavy AHA (hAHA) opens the door to expanded research opportunities.
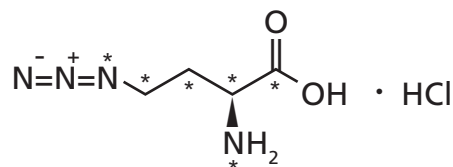
Cambridge Isotope Laboratories, Inc. (CIL) is pleased to offer stable isotope-labeled and unlabeled L-azidohomoalanine· HCL for targeted and untargeted, MS-based proteomics. The unlabeled and labeled AHA (see **Figure 1**) are available for cell culture and animal model experiments. Please inquire for pricing.

Figure 1. Chemical structure of hAHA. The asterisks represent isotope labels ($1,2,3,4$-$^{13}C_4$, 99%; $2,4$-$^{15}N_2$, 98%; chemical purity ≥98%).

Benefits
- Reduce labeling time in SILAM experiments
- Selective peptide/protein analysis
- Enrich low-abundance NSPs
- Enhance identification and quantification

Catalog No.	Description
CNLM-9461	L-Azidohomoalanine·HCl ($1,2,3,4$-$^{13}C_4$; $2,4$-$^{15}N_2$, 98%)
ULM-9460	L-Azidohomoalanine·HCl (unlabeled)
MF-AHA	Mouse Express AHA Mouse Feed (contains 2 g of AHA per kg of mouse feed)
MF-HAHA	Mouse Express hAHA Mouse Feed (contains 2 g of hAHA per kg of mouse feed)
MF-UNLABELED-MET	Mouse Express Mouse Feed (unlabeled) (contains 2 g of L-Met per kg of mouse feed)
MLK-HAHA-KIT	Mouse Express hAHA Mouse Feed Kit (contains 1 kg each of hAHA, AHA, and unlabeled Met feed)

For NSP Analysis

AHA and hAHA are used to evaluate the rate and extent of NSPs. Experimentally, in a recent application example,[4] following a defined labeling period in mice (e.g., 4 days at 2 g AHA per kg of Met-absent feed), the mice were sacrificed and multiple tissue(s) extracted. Through click chemistry (e.g., biotinylation), biotin-alkynes can be covalently attached to the azido group of AHA-labeled proteins in the tissue homogenate(s). This modification enables the low abundance NSPs to be concentrated (at the protein and/or peptide level) prior to LC-MS/MS analysis.

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