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Product Information

SILu™CHOP Stable-Isotope Labeled CHO Proteins

Catalog Number **MSQC12**
Storage Temperature –20 °C

Product Description

SILu™CHOP is a complex mixture of stable isotope labeled proteins derived from the supernatant of a null CHO-K1 cell line cultured in a medium formulated with [$^{13}C_6$, $^{15}N_4$]-Arginine and [$^{13}C_6$, $^{15}N_2$]-Lysine. SILuCHOP contains a broad distribution of protein molecular masses from 10 kDa to over 250 kDa, as demonstrated by SDS-PAGE (see Figure 1). More than 1,400 unique CHO proteins over 6 orders of magnitude dynamic range were identified by LC-MS/MS analysis of a tryptic digest of SILuCHOP, including commonly cited residual host cell proteins (HCPs)[1,2,3] (see Figures 2 and 3).

SILuCHOP can be used to verify the performance of mass spectrometry based workflows used for identification of HCPs in biopharmaceuticals. Since the SILuCHOP proteins are isotopically labeled, test samples can be spiked with a known level of SILuCHOP to demonstrate system suitability, without interfering with the detection of unlabeled HCPs.

Each vial of SILuCHOP contains 100 μg of lyophilized stable-isotope labeled supernatant proteins in phosphate buffer as measured by BCA assay with an albumin calibrator.

Figure 1.
Representative SDS-PAGE of SILuCHOP

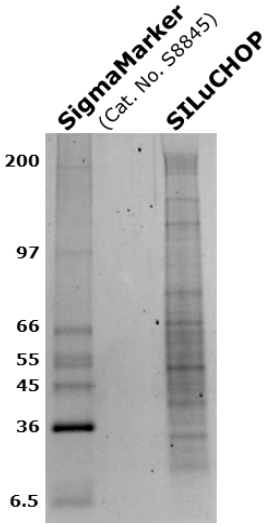
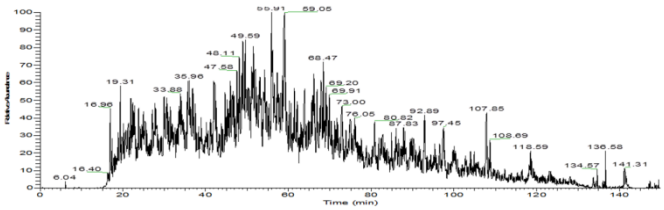


Figure 2.
Representative Total Ion Chromatogram (TIC) of Trypsin-Digested SILuCHOP



Note: Distribution of proteins may vary slightly between lots.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Briefly centrifuge vials before opening. Reconstitute vial contents by adding 100 μl of ultrapure water and gently vortexing for a 1 mg/ml solution. Avoid PBS (phosphate buffer saline) for reconstitution as excess salt may cause some proteins to crash out. The solubilized product can be further diluted as needed.

Storage/Stability

The product is lyophilized from a 20 mM Phosphate Buffer solution and should be stored at –20 °C. Upon reconstitution at 1 mg/ml in water, product can be stored for up to two weeks at 4 °C, or aliquoted and frozen at –20 °C for long-term storage.

Figure 3.
Common HCPs found in SILuCHOP[1,2,3]

Protein	Uniprot Acc. No.	Molecular Weight (kDa)
78 kDa glucose-regulated protein	G3I8R9	72
Acid ceramidase	G3GZB2	45
Alpha-enolase	G3IAQ0	47
Basement membrane-specific heparin sulfate proteoglycan core protein	G3HIM1	334
Beta 2-microglobulin	G3H0S7	6
Cathepsin D	G3I4W7	44
Cathepsin Z	Q9EPP7	34
Chondroitin sulfate proteoglycan 4	G3H0E4	252
Clusterin	G3HNJ3	52
Cofilin-1	G3IDM2	19
Collagen alpha-1(III) chain	G3IM20	115
Complement C1r-A subcomponent	G3GUR1	80
Galectin-3-binding protein	G3H3E4	64
G-protein coupled receptor 56	G3I3K5	77
Heat shock protein HSP 90-beta	G3HC84	48
Insulin-like growth factor-binding protein 4	G3I5N6	28
Laminin subunit alpha-5	G3HGW6	406
Laminin subunit beta-1	G3I278	178
Laminin subunit gamma-1	G3HG25	172
Legumain	G3I1H5	50
Lipoprotein lipase	G3H6V7	51
Lysosomal alpha-glucosidase	G3HTE5	106
Metalloproteinase inhibitor 1	G3IBH0	22
N(4)-(beta-N-aetylglucosaminyl)-L-asparaginase	G3HGM6	37
Neural cell adhesion molecule 1	G3H2I6	114
Nidogen-1	G3HWE4	79
Nidogen-1	G3I3U5	30
Peroxiredoxin-1	G3GYP9	22
Procollagen C-endopeptidase enhancer 1	G3I664	55
Putative phospholipase B-like 2	G3I6T1	66
SPARC	G3H584	28

Note: Distribution of proteins may vary slightly between lots.

References

1. Valente, K.N. et al., Expression of difficult-to-remove host cell protein impurities during extended Chinese hamster ovary cell culture and their impact on continuous bioprocessing. Biotechnology and Bioengineering, **112(6)**, 1232–1242 (2015).
2. Doneanu, C.E., and Chen, W., Analysis of host-cell proteins in biotherapeutic proteins by LC/MS approaches. Methods in Molecular Biology, **1129**, 341-350 (2014).
3. Jawa, V. et al., Evaluating Immunogenicity Risk Due to Host Cell Protein Impurities in Antibody-Based Biotherapeutics. AAPS Journal, **18(6)**, 1439-1452 (2016).

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