Product Information

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Universal Proteomics Standard (UPS) Set

Catalog Number **UPS1**
Storage Temperature –20 °C

Product Description
The Universal Proteomics Standard (UPS) Set is comprised of one vial containing 48 human source or human sequence recombinant proteins (Catalog Number U6133), and one vial (20 µg) of Proteomics Grade Trypsin (Catalog Number T6567).

There are 5 pmoles of each HPLC purified protein in the vial. Each protein has been quantitated by amino acid analysis (AAA). The proteins have been selected to limit heterogeneous post-translational modifications (PTMs).

This set can be used to standardize and/or evaluate mass spectrometric (e.g., LC-MS/MS, MALDI-TOF-MS, etc.) and electrophoretic analysis conditions prior to the analysis of complex protein samples. Moreover, the set may be used to bracket precious experimental datasets between runs of a known complex standard sample, thereby, confirming the robustness of the analysis method and stability of the instrument employed. Additionally, laboratories generating or comparing mass spectrometric data derived from poorly defined samples may use the standard as an external reference to assist with the evaluation of results and experimental methodology. In this regard the running of the standard may facilitate the comparison of mass spectrometric or other proteomic data that is generated in different laboratories using a wide range of varying workflows, analytical techniques, and instrumentation. Lastly, this set will potentially help identify limitations of proteomics analysis systems and search algorithms.

This protein mixture was extensively evaluated and reported on under the direction of the Association of Biomolecular Resource Facilities (ABRF) Proteomics Standards Research Group (sPRG) during a comprehensive 2005/2006 study. The findings of the study were presented at the ABRF 2006 and US HUPO 2006 conferences.[1,2]

Components

Universal Proteomics Standard 5 pmoles each of 48 human proteins, dried in a 2 ml vial Catalog Number U6133	1 vial
Proteomics Grade Trypsin lyophilized enzyme Catalog Number T6567	20 µg

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

Preparation Instructions
The preparation procedure should be compatible with the analysis to be run. For peptide analysis, it is suggested that proteins be resuspended in an appropriate denaturant prior to reduction, alkylation, and tryptic digestion.

Storage/Stability
The set ships in wet ice and storage at –20 °C is recommended. After reconstitution and/or digestion, the product should be dispensed into microcentrifuge tubes in single use aliquots and frozen.

References
1. Arnott, D.P., *et al*., sPRG2006 Study: A Proteomics Standard. Presented at the ABRF 2006 Conference, Long Beach, CA, February 11-14, 2006.
2. Kowalak, J.A., *et al*., ABRF-sPRG2006 Study: Prototype Proteomics Standard. Presented at the US HUPO 2nd Annual Conference, Boston, MA, March 11-15, 2006.
3. UniProt (Universal Protein Resource), © 2006 by UniProt Consortium. http://www.pir.uniprot.org/index.shtml

KR,JAB,GBIS,MAM 01/08-1

UniProt Accession Number[3]	UniProt Protein Name [Synonym]	MW (Da) (calculated)	Source or recombinant	Host	Tag	Potential PTMs *
P00709	Alpha-lactalbumin	14,070	Milk			Glycosylation
P08758	Annexin A5	35,782	Placenta			Acetylation
P01008	Antithrombin-III	49,033	Plasma			Glycosylation
P61769	Beta-2-microglobulin	11,729	Urine			
P55957	BH3 interacting domain death agonist [BID]	21,978	Recombinant	*E. coli*		
P00915	Carbonic anhydrase 1	28,738	Erythrocytes			Acetylation
P00918	Carbonic anhydrase 2	29,095	Erythrocytes			Acetylation
P04040	Catalase	59,583	Erythrocytes			
P07339	Cathepsin D	26,624	Liver			Glycosylation
P08311	Cathepsin G	26,751	Sputum			Glycosylation
P01031	Complement C5 [Complement C5a]	8,266	Recombinant	*E. coli*		
P02741	C-reactive protein	23,030	Plasma			
P06732	Creatine kinase M-type [CK-MM]	43,070	Heart			
P00167	Cytochrome b_5	16,021	Recombinant	*E. coli*	6-His	
P99999	Cytochrome c [Apocytochrome c]	11,608	Recombinant	*E. coli*		
P01133	Epidermal growth factor	6,211	Recombinant	*E. coli*		
P05413	Fatty acid-binding protein	14,716	Plasma			Acetylation, Phosphorylation
P06396	Gelsolin	82,954	Plasma			Phosphorylation
P08263	Glutathione S-transferase A1 [GST A1-1]	25,482	Recombinant	*E. coli*		
P09211	Glutathione S-transferase P [GST]	23,220	Placenta			
P01112	GTPase HRas [Ras protein]	21,292	Recombinant	*E. coli*		
P69905	Hemoglobin alpha chain	15,127	Erythrocytes			
P68871	Hemoglobin beta chain	15,867	Erythrocytes			Acetylation, Nitrosylation, Glycosylation
P12081	Histidyl-tRNA synthetase [Jo-1]	58,223	Recombinant	*E. coli*		
P01344	Insulin-like growth factor II	7,464	Recombinant	*E. coli*		
P10145	Interleukin-8	8,381	Recombinant	*E. coli*		
P02788	Lactotransferrin	78,289	Milk			Glycosylation
P41159	Leptin	16,024	Recombinant	*E. coli*		
P61626	Lysozyme C	14,692	Milk			
P10636	Microtubule-associated protein tau [Tau protein]	46,810	Recombinant	*E. coli*	6-His	
P02144	Myoglobin	17,051	Heart			
P15559	NAD(P)H dehydrogenase [quinone] 1 [DT Diaphorase]	30,984	Recombinant	*E. coli*		
Q15843	Neddylin [Nedd8]	9,071	Recombinant	*E. coli*		
P62937	Peptidyl-prolyl cis-trans isomerase A [Cyclophilin A]	17,947	Recombinant	*E. coli*		
Q06830	Peroxiredoxin 1	22,106	Recombinant	*E. coli*		
P01127	Platelet-derived growth factor B chain	12,286	Recombinant	*E. coli*		
P02753	Retinol-binding protein	21,065	Urine			
P16083	Ribosyldihydronicotinamide dehydrogenase (quinone) [Quinone oxidoreductase 2 or NQO2]	25,817	Recombinant	*E. coli*		
P02787	Serotransferrin [Apotransferrin]	75,143	Plasma			Glycosylation
P02768	Serum albumin	66,393	Recombinant	*Pichia pastoris*		
P63165	Small ubiquitin-related modifier 1 [SUMO-1]	37,420	Recombinant	*E. coli*	GST	
P00441	Superoxide dismutase [Cu-Zn]	15,800	Erythrocytes			Acetylation
P10599	Thioredoxin	12,424	Recombinant	*E. coli*	6-His	
P01375	Tumor necrosis factor [TNF-alpha]	17,350	Recombinant	*E. coli*		
P62988	Ubiquitin	9,387	Recombinant	*E. coli*	6-His	
P63279	Ubiquitin-conjugating enzyme E2 I [UbcH9]	17,995	Recombinant	*E. coli*		
O00762	Ubiquitin-conjugating enzyme E2 C [UbcH10]	20,473	Recombinant	*E. coli*	6-His	
P51965	Ubiquitin-conjugating enzyme E2 E1 [UbcH6]	22,222	Recombinant	*E. coli*	6-His	

* As reported in UniProt. Potential PTMs have not been verified by Sigma.