Recombinant Plasmodium Ubiquitin

DAG2658 Plasmodium falciparum (P.falciparum)
Lot. No. (See product label)

PRODUCT INFORMATION

Product overview	Ubiquitin, plasmodium recombinant was expressed in Plasmodium falciparum (P.falciparum).
Antigen Description	Highly purified ubiquitin free of glycine and buffer salts which can interfere with chemical and in vitro reactions. Ubiquitin is a 76 amino acid, highly conserved nuclear and cytoplasmic eukaryotic protein. It is covalently attached to substrate proteins by enzymes in the Ubiquitin-Proteasome Pathway (UPP). The major role of ubiquitination is to target cellular proteins for the ATP-dependent degradation by the 26S proteasome and proteasome-independent or regulatory events such as protein localization, activity and function. This protein sequence is for protozoan parasite P.falciparum (NP_701482) which causes malaria. Considering its conserved role among eukaryotes, this system is expected to regulate key molecular events driving the parasite life cycle, including parasite discrete apicomplexan mechanisms such as host cell invasion and apicoplast formation.
Source	Plasmodium falciparum (P.falciparum)
Species	Plasmodium falciparum (P.falciparum)
Form	5 mg, lyophilized powder
Molecular Mass	8.6 kDa
AA Sequence	H.sapiens Ub: MQIFVKTLTGKTITLEVEPSDTIENVKAKIQDKEGIPPDQQRLIFAGKQLEDGRT LSDYNIQKESTLHLVLRLRGG P.falcipirum Ub: MQIFVKTLTGKTITLDVEPSDTIENVKAKIQDKEGIPPDQQRLIFAGKQLEDGRTLSDYN IQKESTLHLVLRLRGG
Purity	> 95% by SDS-PAGE
Usage	Typical concentration to support in vitro conjugation is 500 μM to 1 mM depending on conditions

PACKAGING

Storage	Lyophilized powder at 4°C. Solubilized stock solution at -20°C. Avoid multiple freeze/thaw cycles.
Dilutions	Aqueous solutions up to 20 mg/ml

BACKGROUND

Introduction	Ubiquitin is a small regulatory protein that has been found in almost all tissues (ubiquitously) of eukaryotic organisms. It directs proteins to compartments in the cell, including the proteasome which destroys and recycles proteins. Ubiquitin can be attached to proteins and label them for destruction. This discovery won the Nobel Prize for chemistry in 2004. Ubiquitin tags can also direct proteins to other locations in the cell, where they control other protein and cell mechanisms. The ubiquitylation system was initially characterised as an ATP-dependent proteolytic system present in cellular extracts. A heat-stable polypeptide present in these extracts, ATP-dependent proteolysis factor 1 (APF-1), was found to become covalently attached to the model protein substrate lysozyme in an ATP- and Mg2+-dependent process. Multiple APF-1 molecules were linked to a single substrate molecule by an isopeptide linkage, and conjugates were found to be rapidly degraded with the release of free APF-1. Soon after APF-1-protein conjugation was characterised, APF-1 was identified as ubiquitin. The carboxyl group of the C-terminal glycine residue of ubiquitin (Gly76) was identified as the moiety conjugated to substrate lysine residues.
Keywords	Ubiquitin; ubiquitous immunopoietic polypeptide

45-16 Ramsey Road Shirley, NY 11967, USA
Tel: 631-624-4882 ·Fax:631-614-7828
E-mail: info@creative-diagnostics.com
www.creative-diagnostics.com

REFERENCES

Ciechanover A., et al. (1980) J. Biol. Chem. 255: 7525-7528
Coux O., et al. (1996) Ann. Rev. Biochem. 65: 801-847
Glickman M.H. and Ciechanover A. (2002) Physiol. Rev. 82:373-428
Hershko A. and Ciechanover A. (1992) Ann. Rev. Biochem. 61: 761-807
Ponts N., et al. (2008) Plos One. 3 (6): e2386
Ponder E.L and Bogyo M (2004) Euk. Cell. 6:1943-1952
Schwartz A.L and Ciechanover A. (1999) Ann. Rev. Med. 50: 57-74.
Wilkinson K.D. and Audhya T.K. (1981) J. Biol. Chem. 256: 9235-9241

45-16 Ramsey Road Shirley, NY 11967, USA
Tel: 631-624-4882 ·Fax:631-614-7828
E-mail: info@creative-diagnostics.com
www.creative-diagnostics.com