



**LD Biopharma, Inc.**  
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## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human ASF1 $\alpha$  Protein  
**Catalog Number:** hTF-1476  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human Histone chaperone ASF1a encodes a member of the H3 / H4 family of histone chaperone proteins and is similar to the anti-silencing function-1 gene in yeast. The protein is a key component of a histone donor complex that facilitates histone deposition and histone exchange and removal during nucleosome assembly and disassembly. Cooperates with chromatin assembly factor 1 (CAF-1) to promote replication-dependent chromatin assembly and with HIRA to promote replication-independent chromatin assembly. ASF1a is required for the formation of senescence-associated heterochromatin foci (SAHF) and efficient senescence-associated cell cycle exit. ASF1a protein can be phosphorylated by TLK1 and TLK2, and it is highly phosphorylated in S-phase and at lower levels in M-phase. TLK2-mediated ASF1a phosphorylation at Ser-192 prevents proteasome-dependent degradation. Recent data indicated that ASF1a is specifically enriched in the metaphase II human oocyte, is necessary for reprogramming of human adult dermal fibroblasts into undifferentiated iPS cells.

Full-length human ASF1a (204 aa) gene was constructed using full-gene synthesis with codon optimization strategy. 29 aa N-terminal T7 / His / TEV cleavage site Tag was added and expressed in E.coli as inclusion bodies. This protein was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

**Gene Symbol:** ASF1 $\alpha$  (CGI-98; CIA; HSPC146)  
**Accession Number:** NP\_054753  
**Species:** Human  
**Size:** 50  $\mu$ g / Vial  
**Composition:** 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 7 days.



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## Key References

Elena Gonzalez-Munoz., et al., *Histone chaperone ASF1a is required for maintenance of pluripotency and cellular reprogramming*. Science xPress. 17 July. (2014).

Chimura T, et al., *Identification and characterization of CIA/ASF1 as an interactor of bromodomains associated with TFIID*. Proc. Natl. Acad. Sci. U.S.A. 99 (14), 9334-9339 (2002)

O'Sullivan RJ, et al., *Rapid induction of alternative lengthening of telomeres by depletion of the histone chaperone ASF1*. Nat. Struct. Mol. Biol. 21 (2), 167-174 (2014)

## Applications

1. May be used for in vitro ASF1a mediated human oocyte gene transcription regulation for and its role in adults cell's reprogramming study with "ProFectin" reagent based intracellular delivery of this protein.
2. May be used as specific protein substrate for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for ASF1a protein-protein interaction mapping.
4. As immunogen for specific antibody production.

## Quality Control

1. Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHENLYFQGEFAKVQVNNVVVLDNPSPFYNPFQFEITFECIEDLSED  
LEWKIIYVGSASEEYDQVLDSVLVGPVPAGRHMVFVQADAPNPGLIPDADAVGVTVVLITCTY  
RGQEFIRVGYVNNNEYTETELRENPPVKPDFSKLQRNILASNPRVTRFHINWEDNTEKLEDAES  
SNPNLQSLSTDALPSASKGWSTSENSLNVMLESHMDCM