

# Human GADD45A / DDIT-1 Protein (His & GST Tag)

Catalog Number: 11156-H20B



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

DDIT1; GADD45

### Protein Construction:

A DNA sequence encoding the full length of human GADD45A (P24522) (Met 1-Arg 165) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus.

**Source:** Human

**Expression Host:** Baculovirus-Insect Cells

## QC Testing

**Purity:** > 95 % as determined by SDS-PAGE

### Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Met

### Molecular Mass:

The recombinant human GADD45A/GST chimera consists of 402 amino acids and has a calculated molecular mass of 46.2 kDa. It migrates as an approximately 46 kDa band in SDS-PAGE under reducing conditions.

### Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, pH 7.4, 10% gly

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

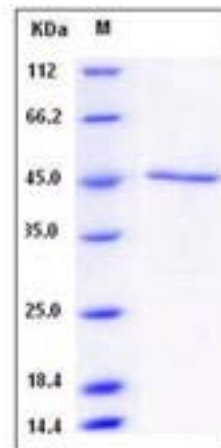
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

GADD45A is a member of the GADD45 Family, and has been found to associate with several cytoplasmic and nuclear factors and has been implicated in several cellular functions, including MAPK signaling, cell cycle regulation, DNA repair and genomic stability, apoptosis, and immune responses. The GADD45 Family of genes is rapidly induced by different stressors, including differentiation-inducing cytokines, and there is a large body of evidence that their cognate proteins are key players in cellular stress responses. GADD45A protein has been reported to interact with multiple important cellular proteins, including Cdc2 protein kinase, proliferating cell nuclear antigen (PCNA), p21Waf1/Cip1 protein, core histone protein and MTK/MEKK4, an up-stream activator of the JNK/SAPK pathway, indicating that GADD45A may play important roles in the control of cell cycle checkpoint, DNA repair process, and signaling transduction. GADD45A expression in response to genotoxic stress illustrates a more complex scenario, wherein transcriptional changes operate in concert with mRNA turnover and translational regulation. GADD45A was the first stress-inducible gene determined to be up-regulated by p53 and is also a target for the p53 homologues, p63 and p73. The decreased GADD45A expression is also considered a survival mechanism, as cancer cells without this control can evade the apoptotic pathway leading to increased tumorigenesis. As GADD45A is an essential component of many metabolic pathways that control proliferating cancer cells, it presents itself as an emerging drug target worthy of further investigation.

## References

- 1.Zhan Q. (2005) Gadd45a, a p53- and BRCA1-regulated stress protein, in cellular response to DNA damage. *Mutat Res.* 569(1-2): 133-43.
- 2.Lal A, *et al.* (2006) E2f4, more forms of gene regulation: the gadd45a story. *Cell Cycle.* 5(13): 1422-5.
- 3.Hoffman B, *et al.* (2007) Role of gadd45 in myeloid cells in response to hematopoietic stress. *Blood Cells Mol Dis.* 39(3): 344-7.

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