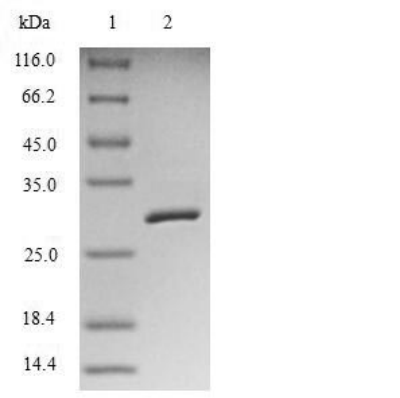
Recombinant Human Baculoviral IAP repeat-containing protein 5 (BIRC5)

Product Code	CSB-EP002706HU
Relevance	Multitasking protein that has dual roles in promoting cell proliferation and preventing apoptosis. Component of a chromosome passage protein complex (CPC) which is essential for chromosome alignment and segregation during mitosis and cytokinesis. Acts as an important regulator of the localization of this complex; directs CPC movement to different locations from the inner centromere during prometaphase to midbody during cytokinesis and participates in the organization of the center spindle by associating with polymerized microtubules. The complex with RAN plays a role in mitotic spindle formation by serving as a physical scaffold to help deliver the RAN effector molecule TPX2 to microtubules. May counteract a default induction of apoptosis in G2/M phase. The acetylated form represses STAT3 transactivation of target gene promoters. May play a role in neoplasia. Inhibitor of CASP3 and CASP7. Isoform 2 and isoform 3 do not appear to play vital roles in mitosis. Isoform 3 shows a marked reduction in its anti-apoptotic effects when compared with the displayed wild-type isoform.
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	O15392
Alias	Apoptosis inhibitor 4 Apoptosis inhibitor survivin
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MGAPTLPPAWQPFLKDHRISTFKNWPFLEGCACTPERMAEAGFIHCPTENEP DLAQCFFCFKELEGWEPDDDPIEEHKKHSSGCAFLSVKKQFEELTLGEFLKLD RERAKNKIAKETNNKKKEFEETAKKVRRAIEQLAAMD
Lead Time	3-7 business days
Research Area	Cell Biology
Source	E.coli
Gene Names	BIRC5
Protein Names	Recommended name: Baculoviral IAP repeat-containing protein 5 Alternative name(s): Apoptosis inhibitor 4 Apoptosis inhibitor survivin
Expression Region	1-142aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.

Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	32.5kDa
Protein Description	Full Length

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Producing recombinant human BIRC5 in E. coli involves several steps. First, cloning the gene of interest into a vector with an N-terminal 6xHis-SUMO-tag gene. The gene of interest codes for the 1-142aa of human BIRC5. And then, transforming the recombinant vector into E. coli cells. Growing the E. coli cells to induce protein expression. The cells are lysed to release the BIRC5 protein, which is purified using affinity chromatography. Finally, the purity of the harvested recombinant BIRC5 protein is checked with SDS-PAGE, exceeding 90%.

Human BIRC5, also known as survivin, is a 16.5 kDa monomer protein with 142 amino acid residues. It is encoded by the BIRC5 gene located on human chromosome 17q25.3 [1]. BIRC5 has been found to play a crucial role in the development and advancement of various cancers, including prostate cancer, endometrial cancer, and lung adenocarcinoma [2][3][4]. It is a member of the inhibitor of apoptosis proteins (IAPs) family, which includes proteins such as XIAP, cIAP1, cIAP2, Livin, and Apollon [5][6]. BIRC5 contains a baculoviral IAP repeat (BIR) domain that binds to caspases and a C-terminal ubiquitin ligase domain responsible for posttranslationally attaching ubiquitin to target proteins [7]. In cancer, BIRC5 has been associated with chemoresistance, metastasis, and tumor progression [8][9]. Studies have shown that BIRC5 is up-regulated in various cancers, influencing factors like radiosensitivity in lung adenocarcinoma [4]. Additionally, BIRC5 has been identified as one of endometrial cancer's most differentially expressed genes [3].

References:

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Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.