PRODUCT INFORMATION

BRAP (human, recombinant)

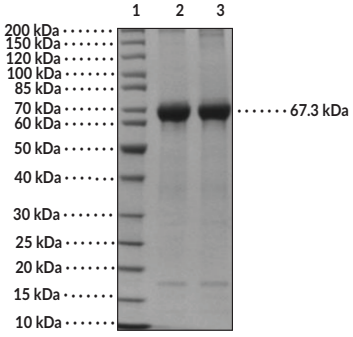
Item No. 45174

Overview and Properties

Synonyms:	BRAP23, BRCA1-associated Protein, Impedes Mitogenic Signal Propagation, IMP, Renal Carcinoma Antigen NY-REN-63, RING Finger Protein 52, RING-type E3 Ubiquitin Transferase BRAP2
Source:	Active recombinant human BRAP expressed in *E. coli*
Uniprot No.:	Q7Z569
Molecular Weight:	67.3 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	50 mM Tris-HCl, pH 7.5, containing 200 mM sodium chloride and 20% glycerol
Endotoxin Testing:	<1.0 EU/g, determined by the LAL endotoxin assay
Protein Concentration:	***batch specific*** mg/ml
Activity:	***batch specific*** U/ml
Specific Activity:	***batch specific*** U/mg

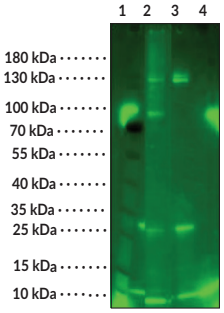
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



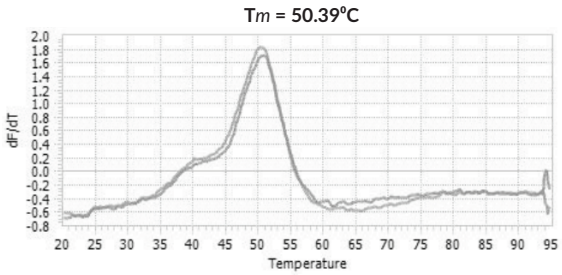
Lane 1: MW Markers
Lane 1: BRAP (2 µg, reduced)
Lane 2: BRAP (2 µg, non-reduced)

SDS-PAGE Analysis of BRAP. This protein has a calculated molecular weight of 67.3 kDa.



Lane 1: MW Markers
Lane 2: BODIPY-Ub + UBE1 + UbcH5b + BRAP with ATP
Lane 3: BODIPY-Ub + UBE1 + UbcH5b + with ATP
Lane 4: BODIPY-Ub + UBE1 + UbcH5b + without ATP

The ubiquitin conjugating activity of BRAP was validated through its ability to catalyze the generation of polyubiquitin chains in the presence of the E1 activating enzyme UBE1, the E2 conjugating enzyme UbcH5b and BODIPY-ubiquitin. Incubation of BRAP for 60 minutes at 37˚C in the presence of BODIPY-ubiquitin, UBE1, UbcH5b, and ATP (Lane 2) was compared alongside two control reactions with either BRAP (Lane 3) or BRAP + ATP (Lane 4) excluded from the reaction. Ubiquitin conjugates were identified by the migration of the BODIPY-ubiquitin band, and these were observed only in the presence of ATP and BRAP.



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Description

BRCA1-associated protein (BRAP) is an E3 ubiquitin ligase with roles in the regulation of nuclear protein import and cell signaling.[1] It is composed of a nucleotide-binding α/β plait, RING-finger, UBP-like zinc-finger (ZfUBP), and coiled-coil domain and localizes to the cytoplasm.[1,2] BRAP binds to a variety of transcription factors and kinases in the cytosol to both inhibit nuclear translocation and impede signal propagation. SNPs in *BRAP* are associated with an increased risk of myocardial infarction and with a predisposition to alcohol use disorder.[3,4] Cayman's BRAP (human, recombinant) protein can be used for enzyme activity and Western blot (WB) applications and has a calculated molecular weight of 67.3 kDa.

References

1. Shoji, S., Hanada, K., Ohsawa, N., *et al*. Central catalytic domain of BRAP (RNF52) recognizes the types of ubiquitin chains and utilizes oligo-ubiquitin for ubiquitylation. *Biochem. J.* **474(18)**, 3207-3226 (2017).
2. Fulcher, A.J., Roth, D.M., Fatima, S., *et al*. The BRCA-1 binding protein BRAP2 is a novel, negative regulator of nuclear import of viral proteins, dependent on phosphorylation flanking the nuclear localization signal. *FASEB J.* **24(5)**, 1454-1466 (2010).
3. Ozaki, K., Sato, H., Inoue, K., *et al*. SNPs in BRAP associated with risk of myocardial infarction in Asian populations. *Nat. Genet.* **41(3)**, 329-333 (2009).
4. Kim, J.W., Choe, Y.M., Shin, J.G., *et al*. Associations of BRAP polymorphisms with the risk of alcohol dependence and scores on the alcohol use disorders identification test. *Neuropsychiatr. Dis. Treat.* **15**, 83-94 (2018).

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