

# PRODUCT INFORMATION



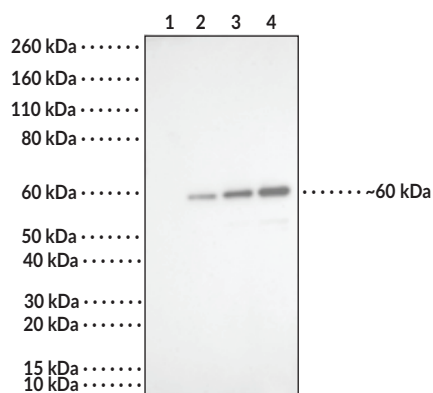
## smgGDS-607 Monoclonal Antibody (Clone 4D6)

Item No. 28945

### Overview and Properties

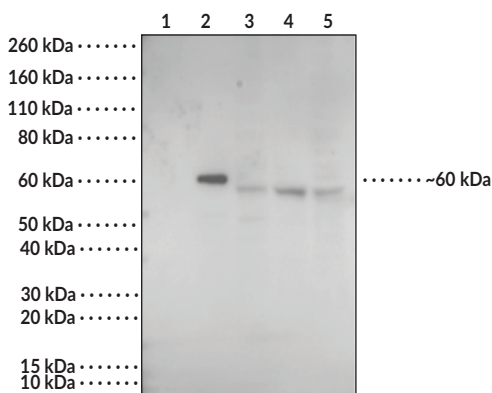
**Contents:** This vial contains 500 µg of protein G-purified monoclonal antibody.  
**Synonyms:** RAP1GDS1, Rap1 GTPase-GDP Dissociation Stimulator 1  
**Immunogen:** Peptide between residues 122-170 of human smgGDS-607  
**Cross Reactivity:** (+) smgGDS-607; (-) smgGDS-558  
**Species Reactivity:** (+) Human, African green monkey; other species not tested  
**Form:** Liquid  
**Storage:** -20°C (as supplied)  
**Stability:** ≥3 years  
**Storage Buffer:** PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide  
**Clone:** 4D6  
**Host:** Mouse  
**Isotype:** IgG1  
**Applications:** ELISA, Immunohistochemistry (IHC), and Western blot (WB); the recommended starting concentration is 5 µg/ml for ELISA, IHC, and WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

### Images



Lane 1: smgGDS-558 protein (1 µg)  
Lane 2: smgGDS-607 protein (0.02 µg)  
Lane 3: smgGDS-607 protein (0.05 µg)  
Lane 4: smgGDS-607 protein (0.1 µg)

Detection of recombinant human smgGDS-607 (isoform 1) but not smgGDS-558 (isoform 2).



Lane 1: smgGDS-558 protein (0.015 µg)  
Lane 2: smgGDS-607 protein (0.015 µg)  
Lane 3: PC-3 cell lysate (40 µg)  
Lane 4: COS-1 cell lysate (40 µg)  
Lane 5: HEK293 cell lysate (40 µg)

Detection of purified recombinant smgGDS-607 protein and the endogenous smgGDS-607 protein expressed in human and primate cell lines.

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY  
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## Description

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SmgGDS is a chaperone protein and guanine nucleotide exchange factor encoded by *RAP1GDS1* that regulates the prenylation and trafficking of small GTPases and has a role in oncogenesis.<sup>1-3</sup> Alternative splicing of the *RAP1GDS1* pre-mRNA produces a full-length isoform, smgGDS-607, and a short isoform, smgGDS-558.<sup>1</sup> SmgGDS-607 is composed of 607 residues and contains an N-terminal nuclear export sequence and multiple armadillo repeats, which are essential for binding to small GTPases that contain a C-terminal polybasic region.<sup>1,2,4</sup> It is expressed in a variety of tissues and cancer cell lines.<sup>2</sup> SmgGDS-607 binds to newly synthesized, preprenylated small GTPases and traffics them to prenyltransferases (PTases), which catalyze their prenylation, a process that is critical for the membrane localization and subsequent activation of small GTPases.<sup>2,3</sup> An elevated ratio of smgGDS-607 to smgGDS-558 has been observed in cancer cell lines and is associated with reduced survival in patients with breast cancer.<sup>2</sup> Cayman's smgGDS-607 Monoclonal Antibody can be used for ELISA, immunohistochemistry (IHC), and Western blot (WB) applications. The antibody recognizes a unique region of smgGDS-607 that is not present in smgGDS-558, specifically detecting smgGDS-607 at ~60 kDa from human and African green monkey samples.

## References

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1. Gonyo, P., Bergom, C., Brandt, A.C., *et al.* SmgGDS is a transient nucleolar protein that protects cells from nucleolar stress and promotes the cell cycle by regulating DREAM complex gene expression. *Oncogene* **36(50)**, 6873-6883 (2017).
2. Brandt, A.C., McNally, L.R., Lorimer, E.L., *et al.* Splice switching an oncogenic ratio of SmgGDS isoforms as a strategy to diminish malignancy. *Proc. Nat. Acad. Sci. USA* **117(7)**, 3627-3636 (2020).
3. Schuld, N.J., Vervacke, J.S., Lorimer, E.L., *et al.* The chaperone protein SmgGDS interacts with small GTPases entering the prenylation pathway by recognizing the last amino acid in the CAAX motif. *J. Biol. Chem.* **289(10)**, 6862-6876 (2014).
4. Berg, T.J., Gastonguay, A.J., Lorimer, E.L., *et al.* Splice variants of SmgGDS control small GTPase prenylation and membrane localization. *J. Biol. Chem.* **285(46)**, 35255-35266 (2010).

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