

## RalGDS RBD Agarose Beads

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**CATALOG NUMBER:** STA-418

**STORAGE:** -20°C

**QUANTITY AND CONCENTRATION:** 800  $\mu$ L of 50% Agarose slurry, 400  $\mu$ g of murine RalGDS-RBD (amino acid 726-823) in 1X PBS, 50% Glycerol

**SHELF LIFE:** 1 year from receipt under proper storage conditions; avoid multiple freeze thaw cycles

### **Background**

Small GTP-binding proteins (or GTPases) are a family of proteins that serve as molecular regulators in signaling transduction pathways. Rap, a 24 kDa protein of the Ras superfamily, regulates a variety of biological response pathways that include cell adhesion, proliferation, differentiation, and apoptosis. The Ras-like proteins Rap1 and Rap2 share 60% identity. Like other small GTPases, Rap regulates molecular events by cycling between an inactive GDP-bound form and an active GTP-bound form. In their active (GTP-bound) state, Rap1 and Rap2 bind specifically to the Rap-binding domain (RBD) of RalGDS to control downstream signaling cascades.

### **Presentation**

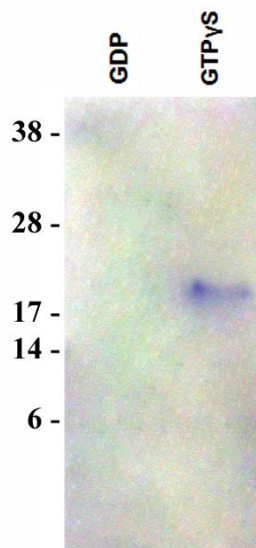
RalGDS RBD Agarose beads, in color, are easy to visualize, minimizing potential loss during washes and aspirations of Rap-GTP pulldown (Figure 1).



**Figure 1: RalGDS-RBD Beads in Color**

### **Activity**

Product specifically interacts and precipitates GTP-bound Rap from cell lysate (Figure 2).



**Figure 2: Rap1 Activation Assay.** *Lane 1*, NIH 3T3 cell lysate loaded with GDP and incubated with RalGDS RBD Agarose beads. *Lane 2*, NIH 3T3 cell lysate loaded with GTP $\gamma$ S and incubated with RalGDS RBD Agarose beads.

### References

1. Kitayama, H., Sugimoto, Y., Matsuzaki, T., Ikawa, Y., and Noda, M. (1989) *Cell* **56**, 77–84.
2. Matsubara, K., Kishida, S., Matsuura, Y., Kitayama, H., Noda, M., and Kikuchi, A. (1999) *Oncogene* **18**, 1303–1312.
3. Bos, J. L., de Rooij, J., and Reedquist, K. A. (2001) *Nature Rev.* **2**, 369–377.
4. Herrmann, C., Horn, G., Spaargaren, M., and Wittinghofer, A. (1996) *J. Biol. Chem.* **271**, 6794–6800.

### Recent Product Citations

1. Takino, J.I. et al. (2019). The inhibition of Bax activation-induced apoptosis by RasGRP2 via R-Ras-PI3K-Akt signaling pathway in the endothelial cells. *Sci Rep.* **9**(1):16717. doi: 10.1038/s41598-019-53419-4.
2. Sato, T. et al. (2019). RASGRP2 Suppresses Apoptosis via Inhibition of ROS Production in Vascular Endothelial Cells. *ScientificWorldJournal.* **2019**:4639165. doi: 10.1155/2019/4639165.

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