

## PAK1 PBD Agarose Beads

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**CATALOG NUMBER:** STA-411

**STORAGE:** -20°C

**QUANTITY AND CONCENTRATION:** 800  $\mu$ L of 50% Agarose slurry, 400  $\mu$ g PAK1-PBD 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. Rac, a 21 kDa protein, belongs to the family of Rho GTPases regulating a variety of biological response pathways that include cell motility, cell division, gene transcription, and cell transformation. Like other small GTPases, Rac regulates molecular events by cycling between an inactive GDP-bound form and an active GTP-bound form. In its active (GTP-bound) state, Rac binds specifically to the p21-binding domain (PBD) of p21-activated protein kinase (PAK) to control downstream signaling cascades.

### **Presentation**

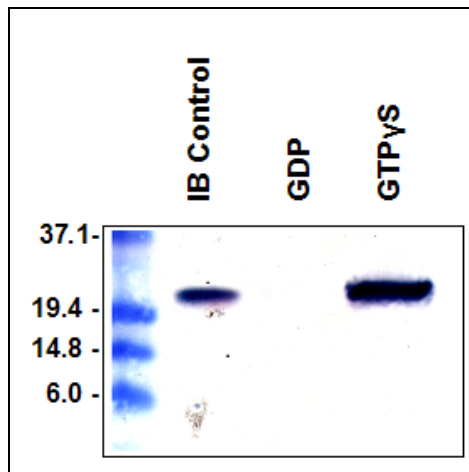
PAK PBD Agarose beads, in color, are easy to visualize, minimizing potential loss during washes and aspirations of Rac-GTP pulldown (Figure 1).



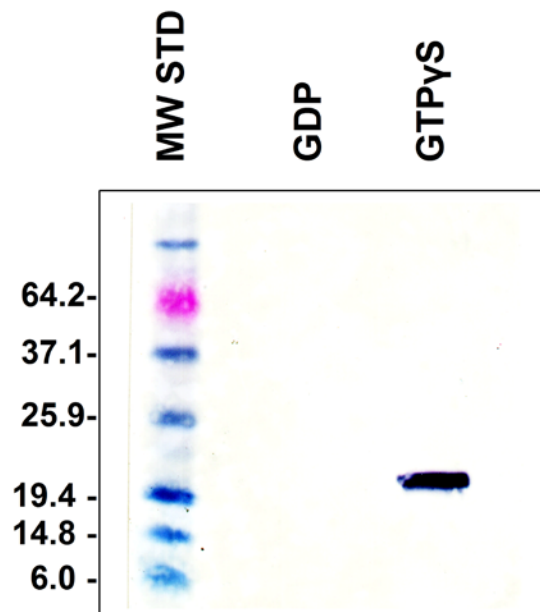
**Figure 1:** PAK-PBD Beads in Color

### Activity

Product specifically interacts and precipitates GTP-bound Rac or Cdc 42 from cell lysate (Figures 2 & 3).



**Figure 2:** Rac Activation Assay. *Lane 1*, GTPase Immunoblot Positive Control. *Lane 2*, 293 cell lysate loaded with GDP and incubated with PAK PBD Agarose beads. *Lane 3*, 293 cell lysate loaded with GTP $\gamma$ S and incubated with PAK-1 PBD Agarose beads. Samples were immunoblotted with anti-Rac antibody.



**Figure 3:** Cdc42 Activation Assay. *Lane 1*, MW Standard. *Lane 2*, 293 cell lysate loaded with GDP and incubated with PAK PBD Agarose beads. *Lane 3*, 293 cell lysate loaded with GTP $\gamma$ S and incubated with PAK-1 PBD Agarose beads. Samples were immunoblotted with anti-Cdc42 antibody.

## References

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## Recent Product Citations

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9. Zhang, Q-G. et al. (2009). Estrogen attenuates ischemic oxidative damage via an estrogen receptor alpha-mediated inhibition of NADPH oxidase activation. *J. Neurosci.* **29**:13823-13836.

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