

## Product Information

**Calcyclin binding protein  
human, recombinant  
histidine-tagged  
expressed in *Escherichia coli***

Catalog Number **C7994**  
Storage Temperature  $-20\text{ }^{\circ}\text{C}$

Synonyms: CacyBP; GIG5; MGC87971; PNAS-107;  
RP1-102G20.6; S100A6BP; SIP

### Product Description

Calcyclin binding protein (CacyBP, Gene ID: 27101) is a 30 kDa protein, which was identified on the basis of its ability to interact with S100 proteins in a calcium dependent manner. It is involved in calcium-dependent ubiquitination and subsequent proteosomal degradation of target proteins. It serves as an adaptor protein in ubiquitin E3 complexes and participates in the ubiquitin-mediated degradation of  $\beta$ -catenin.<sup>1</sup>

CacyBP is involved in cell growth inhibition and cell differentiation:

- It is a potential inhibitor of cell growth and invasion of gastric cancer cells, at least in part through its effect on  $\beta$ -catenin protein expression and transcriptional activation of Tcf/LEF.<sup>2</sup>
- Overexpression of CacyBP also leads to the suppression of growth in renal cell carcinoma.<sup>3</sup>
- It is up-regulated during differentiation of cardiomyocytes.<sup>4</sup>
- It is highly expressed in brain neurons. Its level is higher in differentiated neuroblastoma NB2a cells than in undifferentiated ones. Moreover, overexpression of CacyBP in NB2a cells increases the level of GAP-43, a marker of differentiation, implying a potential role of CacyBP in cell differentiation.<sup>5-7</sup>

The product is supplied as a solution in 20 mM Tris pH 7.6, 1 mM EDTA, 1 mM DTT, and 30% glycerol (v/v).

Purity:  $\geq 90\%$  by SDS-PAGE.

### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

### Storage/Stability

The product ships on dry ice and storage at  $-20\text{ }^{\circ}\text{C}$  is recommended. The product is stable at  $-20\text{ }^{\circ}\text{C}$  for at least two years.

Upon first use, it is recommended to divide the enzyme into aliquots and store at  $-20\text{ }^{\circ}\text{C}$ .

### References

1. Santelli, E., et al., Structural analysis of Siah1-Siah-interacting protein interactions and insights into the assembly of an E3 ligase multiprotein complex. *J. Biol. Chem.*, **280**, 34278-34287 (2005).
2. Ning, X., et al., Calcyclin-binding protein inhibits proliferation, tumorigenicity, and invasion of gastric cancer. *Mol. Cancer Res.*, **5**, 1254-1262 (2007).
3. Sun, S., et al., Overexpressed CacyBP/SIP leads to the suppression of growth in renal cell carcinoma. *Biochem. Biophys. Res. Commun.*, **356**, 864-871 (2007).
4. Au, K.W., et al., Calcyclin binding protein promotes DNA synthesis and differentiation in rat neonatal cardiomyocytes. *J. Cell. Biochem.*, **98**, 555-566 (2006).
5. Schneider, G., et al., CacyBP/SIP interacts with tubulin in neuroblastoma NB2a cells and induces formation of globular tubulin assemblies. *Biochim. Biophys. Acta*, **1773**, 1628-1636 (2007).
6. Filipek, A., et al.,  $\text{Ca}^{2+}$ -dependent translocation of the calcyclin-binding protein in neurons and neuroblastoma NB-2a Cells. *J. Biol. Chem.*, **277**, 21103-21109 (2002).
7. Jastrzebska, B., et al., Calcyclin (S100A6) binding protein (CacyBP) is highly expressed in brain neurons. *J. Histochem. Cytochem.*, **48**, 1195-1202 (2000).

CAA,EB,MAM 08/08-1

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.