

# PRODUCT INFORMATION



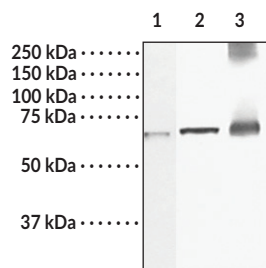
## Guanylate Cyclase $\beta$ 1 subunit (soluble) Polyclonal Antibody

Item No. 160897

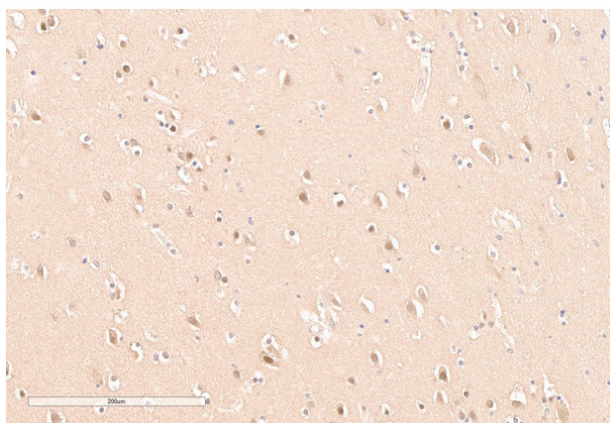
### Overview and Properties

<b>Contents:</b>	This vial contains 500 $\mu$ l of peptide affinity-purified polyclonal antibody.
<b>Synonyms:</b>	sGC $\beta$ 1 subunit, GCS-beta-1, Gucy1b1
<b>Immunogen:</b>	Synthetic peptide from an internal region of rat sGC $\beta$ 1 subunit
<b>Cross Reactivity:</b>	(-) sGC $\alpha$ 1 subunit
<b>Species Reactivity:</b>	(+) Human, bovine, rat; other species not tested
<b>Uniprot No.:</b>	P20595
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	$\geq$ 3 years
<b>Storage Buffer:</b>	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
<b>Host:</b>	Rabbit
<b>Applications:</b>	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution for IHC and WB is 1:200. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

### Images



Lane 1: Bovine lung membrane (75  $\mu$ g)  
Lane 2: Mouse brain supernatant (25  $\mu$ g)  
Lane 3: Bovine lung supernatant (25  $\mu$ g)



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) human brain tissue after heat-induced antigen retrieval in pH 6.0 citrate buffer. After incubation with Guanylate Cyclase  $\beta$ 1 Subunit (soluble) Polyclonal Antibody (Item No. 160897) at a 1:200 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).

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  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/17/2023

CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM

# PRODUCT INFORMATION



## Description

---

Soluble guanylate cyclase (sGC) is a heterodimeric hemoprotein and nitric oxide (NO) sensor composed of two subunits,  $\alpha 1$  and  $\beta 1$ .<sup>1,2</sup> The approximately 70 kDa sGC  $\beta 1$  subunit is encoded by *GUCY1B3* in humans, ubiquitously expressed, and localized to the cytosol.<sup>3</sup> The sGC histidine residue at position 105 is ligated to a ferrous heme that selectively binds NO to activate the C-terminal guanylate cyclase activity of the sGC heterodimer, catalyzing the synthesis of cGMP.<sup>1,4</sup> Knockdown of *Gucy1B3* or expression of a heme-deficient sGC  $\beta 1$  subunit inhibits NO-induced reductions in blood pressure and platelet activation in mice, indicating a heme-dependent role for the sGC  $\beta 1$  subunit in blood pressure regulation.<sup>5</sup> Cayman's Guanylate Cyclase  $\beta 1$  subunit (soluble) Polyclonal Antibody can be used for immunohistochemistry (IHC) and Western blot (WB) applications. The antibody recognizes the sGC  $\beta 1$  subunit from human, bovine, and rat samples.

## References

---

1. Karow, D.S., Pan, D., Davis, J.H., *et al.* Characterization of functional heme domains from soluble guanylate cyclase. *Biochemistry* **44**(49), 16266-16274 (2005).
2. Montfort, W.R., Wales, J.A., and Weichsel, A. Structure and activation of soluble guanylyl cyclase, the nitric oxide sensor. *Antioxid. Redox Signal.* **26**(3), 107-121 (2017).
3. Derbyshire, E.R. and Marletta, M.A. Structure and regulation of soluble guanylate cyclase. *Annu. Rev. Biochem.* **81**, 533-559 (2012).
4. Wobst, J., Rumpf, P.M., Dang, T.A., *et al.* Molecular variants of soluble guanylyl cyclase affecting cardiovascular risk. *Circ. J.* **79**(3), 463-469 (2015).
5. Thoonen, R., Cauwels, A., Decaluwe, K., *et al.* Cardiovascular and pharmacological implications of haem-deficient NO-unresponsive soluble guanylate cyclase knock-in mice. *Nat. Commun.* **6**, 8482 (2015).

CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM