

Recombinant Rat Calbindin 1

Cat. No. Calb1-251R **Lot. No.** (See product label)

SPECIFICATION

Product Overview Recombinant Rat CaBP9K produced in *E. Coli* contains 261 amino acids and has a molecular mass of 28 kDa. Recombinant CABP28K contains 4 active and 2 inactive EF-hand Ca-binding domains.

Species Rat

Source E.coli

Description

Calbindins are Ca-binding proteins belonging to the troponin C superfamily. CALB28K/Calbindin1/CALB1 (D28K/Spot35 protein or cholecalciferol, rat 261 aa; mouse 261 aa; human 261-aa, chromosome 8q21.3-q22.1) was originally described as 27-kDa induced by vitamin D in the duodenum of chicken. In mammals, it is expressed in the kidney, pancreatic islets, and brain. In brain, its synthesis is independent of vitamin D. The gene for CABP28K is clustered in the same region as carbonic anhydrase. The neurons in the brains of patients with Huntington disease are CAB28K depleted. There are two types of CaBPs: the "trigger"- and the "buffer"-CaBPs. The conformation of "trigger" type CaBPs changes upon Ca²⁺ binding and exposes regions on protein that interact with target molecules, thus altering their activity. The buffer-type CABP are thought to control the intracellular calcium concentration. Calbindin D-28K is found predominantly in subpopulations of central and peripheral nervous system neurons, and in certain epithelial cells involved in Ca²⁺ transport such as distal tubular cells and cortical collecting tubules of the kidney, and in enteric neuroendocrine cells.

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Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Formulation	The protein was lyophilized from a concentrated solution (1mg/ml) containing 0.1mM CaCl ₂ .
Purity	Greater than 90% as determined by: Analysis by reducing and non-reducing SDS-PAGE Coomassie.
Solubility	It is recommended to reconstitute the lyophilized CABP28K in sterile 18MΩ-cm H ₂ O not less than 100g/ml, which can then be further diluted to other aqueous solutions.
Stability	Lyophilized CABP28K although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution CABP28K should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.
Applications	CABP28K can be used for immunoblots, absorption experiments in immunohistochemistry, radioimmunoassay and intracellular injection. For adsorption we suggest the following procedure: A- Dilute 1 μl of the monoclonal antibody against calbindin D-28k in 5 ml of the usual buffer for immunohistochemistry (final dilution 1:5"000). B- Add 1 g of the recombinant protein to 1 ml of the diluted antibody solution and mix well. C- Incubate for at least 6 hours in the cold. D- Apply to tissue- sections and incubate for 3 days. E- Complete the immunohistochemical reaction as usual (biotinylated second antibody, ABC-complex, DAB). As a result, the immunostaining should be strongly reduced or even completely prevented.

GENE INFORMATION

Gene Name [Calb1 calbindin 1 \[Rattus norvegicus \]](#)

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Synonyms	Calb1; calbindin 1; CaBP28K; MGC93326;cerebellar Ca-binding protein spot 35 protein; calbindin 1, (28kD); calbindin D28; MGC93326; calbindin 1 28 kD
Gene ID	83839
mRNA Refseq	NM_031984
Protein Refseq	NP_114190
UniProt ID	P07171
Chromosome Location	5q13
Function	calcium ion binding; vitamin D binding

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