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Product Description

PV 25

Rabbit anti Parvalbumin

Product: Rabbit anti-parvalbumin

Code No.: PV 25

Lot No.: 5.10

Form: Lyophilized antiserum (no preservatives).

Quantity: 200 µl.

Reconstitution: with 200 µl bidistilled water.

Description

This antiserum was produced against rat muscle parvalbumin (1). It cross-reacts with many other species, including human parvalbumin. It can be used in immunohistochemistry, but not for immunoblotting.

Background

Calcium binding-proteins represent a family of small, acidic proteins equipped with peculiar cavities which accept Ca^{2+} with high selectivity (2). There are two types of calcium binding-proteins, "trigger" and "buffer" proteins. Those of the "trigger"-type (e.g. calmodulin and troponin-C) act by changing shape upon binding Ca^{2+} . This distortion exposes regions on the surface of the protein, which interact with surrounding target molecules, altering their activity. The calcium binding-protein of the "buffer"-type are conceived as a system which is in charge of controlling the Ca^{2+} concentration inside cells. Parvalbumin occurs mainly in subpopulations of nerve cells (3) and in fast muscle fibers (4). It might confer on these cells peculiar skills in the handling of calcium-ions.

Immunoblot

The antiserum PV 25 does not recognize the antigen after SDS-gel electrophoretic separation of brain extracts. Therefore, antiserum PV 25 cannot be used in immunoblots.

Immunohistochemistry on parvalbumin knock-out mice

Antiserum PV 25 labels a subpopulation of neurons in the normal brain with high efficiency (Fig. 2a), but does not stain the brain of parvalbumin knock out mice (Fig. 2b).



Fig 2a: Immunohistochemical staining with antiserum PV 25 in the cerebral cortex of a control mouse. Notice the strong staining of a myriad of interneurons in various layers of the cerebral cortex. X100



Fig 2b: Absence of specific immunohistochemical staining with antiserum PV 25 in the cerebral cortex of a parvalbumin knock-out mouse (5). X 100

Working dilutions

Immunohistochemistry: 1:5'000 - 1:10'000 with the avidin-biotin method.

Immunoblots: 1:500 - 1:1'000

We recommend that the optimal dilutions be determined by titration experiments.

Storage

Reconstitute and make small portions upon arrival (e.g. 2-5 μ l). For long storage, keep at - 80°C (or at least - 20°C). For continuous use keep at 4°C (with 0.01% Na-azide). Avoid repeated freezing and thawing.

References

1. Kägi U., et al. (1987) J. Biol. Chem. 262: 7314-7320
2. Kretsinger R.H. (1981) Neurosci. Res. Progr. Bull. 19/8, MIT-Press
3. Celio M.R., Heizmann C.W. (1981) Nature 293: 300-302
4. Celio M.R., Heizmann C.W. (1982) Nature 297:504-506
5. Schwaller B., et al. (1999) Am. J. Physiol. 276. C395-403