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Product Description
Rabbit anti Parvalbumin

PV 27a

Straight antiserum

Product: Rabbit anti-Parvalbumin

Code No: PV27a

Form: Lyophilized antiserum (no preservatives).

Quantities available: 200 µl, 500 µl, and 1 ml

Reconstitution: with corresponding amount of bi-distilled water

Description
This antiserum was produced against recombinant rat parvalbumin. It cross-reacts with many other species, humans included. It can be used in immunohistochemistry (Fig. 1) and for immunoblotting (Fig. 2).

Background
Calcium binding-proteins represent a family of small, acidic proteins equipped with peculiar cavities which accept Ca^{2+} with high selectivity (1). 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 (2) and in fast muscle fibers (3). It might confer on these cells’ peculiar skills in the handling of calcium-ions.

Immunohistochemistry on parvalbumin knock-out mice
Antiserum PV27a labels a subpopulation of neurons in the normal brain with high efficiency (Fig. 1a), but does not stain the brain of parvalbumin knock-out mice (Fig. 1b).

Immunoblot
The antiserum PV27a recognizes the antigen at 12 kDa after SDS-gel electrophoretic separation of brain extracts in various species (Fig. 2A), but not in the brain of parvalbumin knock out mice (Fig. 2b).

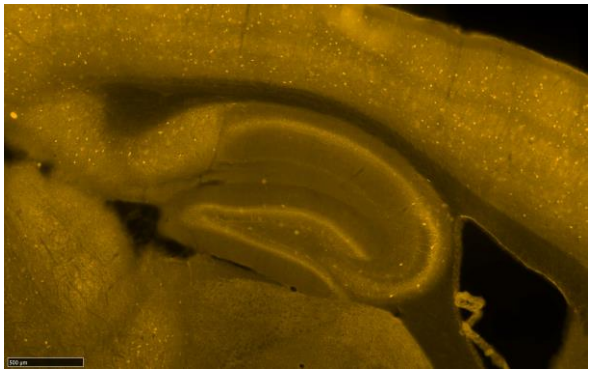

Fig 1a: Immunofluorescent staining with antiserum PV 27a in the hippocampus and cerebral cortex of a C57/Bl6 mouse. Notice the strong staining of interneurons in various cortical layers and in the hippocampus.

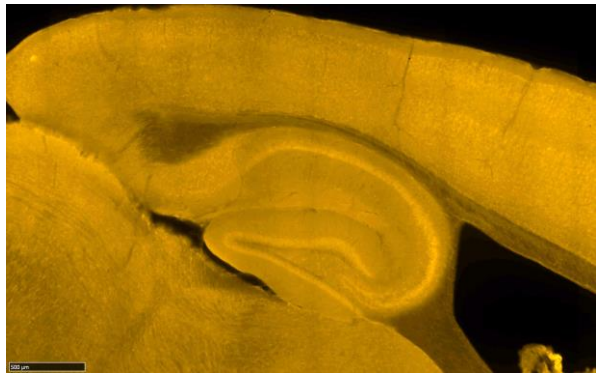

Fig 1b: Absence of specific immunofluorescent staining with antiserum PV 27a in the hippocampus and cerebral cortex of a parvalbumin knock-out mouse.

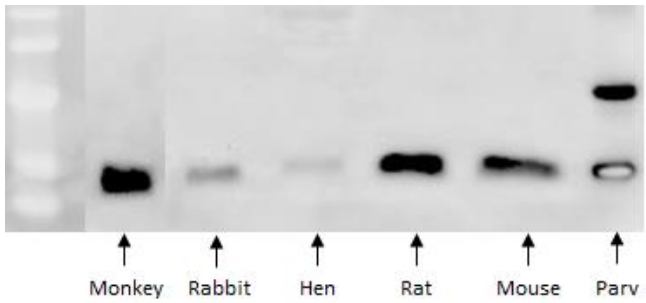

Fig. 2a. The antiserum PV27a recognizes a protein of 12 kDa, in brain extracts of these five species. The lane on the right show a second band at 24 KDa, sign of parvalbumin-dimerization.

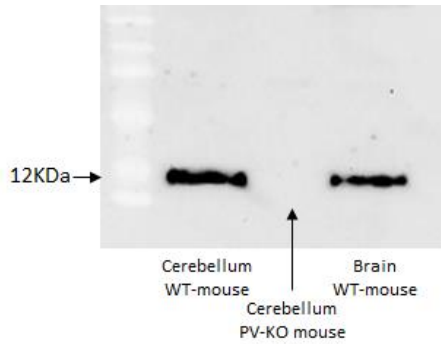

Fig 2b: The antiserum PV27a recognizes parvalbumin in the cerebellar extract of a C57/Bl6 mouse, but not in a parvalbumin knock out mouse.

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 with 200 µl bi-distilled water and make small portions upon arrival (e.g. 2-5 µl). For long storage, keep at - 80°C (or at least - 20°C). For continuous use keep the diluted antiserum at 4°C (with 0.01% Na-azide). Avoid repeated freezing and thawing.

References

1. Kretsinger R.H. (1981) Neurosci. Res. Progr. Bull. 19/8, MIT-Press
2. Celio M.R., Heizmann C.W. (1981) Nature 293: 300-302
3. Celio M.R., Heizmann C.W. (1982) Nature 297:504-506