Monoclonal Antibody to Rodent CPG2 for Studying Neuronal Activity

Technology #11621

Applications

CPG2 is a protein that is regulated by neuronal activity in the rodent brain. CPG2 is uniquely expressed in the postsynaptic zones of glutamatergic synapses, so antibodies to CPG2 would be an excellent tool for studying excitatory synaptic activity in mice and rats. This technology is a set of 3 monoclonal antibodies to CPG2 that can be used for Western blotting, immunohistochemistry, and immunoprecipitation. No other antibodies to rodent CPG2 currently exist, so this technology enables new experimental approaches in neuroscience and biology research. An application for this monoclonal antibody is to study excitatory neuronal activity.

Technology

Mouse hybridoma lines were generated against the CPG2-specific peptide to obtain 3 monoclonal antibodies to CPG2. The antibodies are specific to the clathrin-coated pits in the postsynaptic zone in glutamatergic synapses. This unique specificity enables high-resolution imaging of glutamatergic synapses, in contrast to antibodies to other proteins such as PSD-95 that are expressed in other synaptic sites. Glutamatergic synapses are the most common type of synapse in the brain, and are a major area of research in both biology and neuroscience labs. These antibodies enable imaging and measurement of protein levels related to neuronal activity in rodent models, providing new tools for a large community of researchers.

Advantages

- Can be used for Western blotting, immunohistochemistry, and immunoprecipitation
- Uniquely selective marker that is specific to glutamatergic synapses, providing more precise experimental results than other antibodies
- Specifically marks clathrin-coated pit internalizations, enabling high-resolution analysis of the postsynaptic side of glutamatergic synapses
- Only antibody available that can recognize mouse and rat CPG2, enabling new experimental approaches that are not possible with currently available antibodies

Categories For This Invention:

Life Sciences
Research Tools
Antibody (Research Tools)

Intellectual Property:

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Publications:

CPG2: A Brain- And Synapse-Specific Protein that Regulates the Endocytosis of Glutamate Receptors
Neuron
2012, 44(4):677-90

External Links:

Nedivi Laboratory
http://nedivilab.mit.edu/

Image Gallery:

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