Product Information

Monoclonal Anti-Oligodendrocyte Marker O4 Antibody

Produced in mouse, purified immunoglobulin

O7139

Product Description

Monoclonal Anti-Oligodendrocyte Marker O4 was produced from a hybridoma resulting from the fusion of a mouse myeloma with B cells obtained from a mouse immunized with white matter of the corpus callosum from bovine brain. The IgM fraction of the tissue culture supernatant was purified by Anti-IgM affinity chromatography.

Monoclonal Anti-Oligodendrocyte Marker O4 recognizes Oligodendrocyte marker O4 by immunohistochemistry in fixed differentiated rat cortical stem cells and has also been used in flow cytometry. The antibody is specific for human, mouse, rat, and chicken oligodendrocyte cell surface marker O4.

Oligodendrocytes are myelinating cells in the central nervous system (CNS) that form the myelin sheath of axons to support rapid nerve conduction. The monoclonal antibodies O1 and O4 react with different antigens that are expressed at different times on the surface of oligodendrocyte progenitors.[1] These antibodies have often been used together to define oligodendrocyte progenitor cells (OPCs) and immature oligodendrocytes.[2,3] Progenitors that are O4 antigen-positive and O1 antigen-negative have been shown to differentiate into O1 antigen-positive oligodendrocytes *in vitro*.[4]

Reagent

Lyophilized from 0.2 µm-filtered solution in phosphate buffered saline containing carbohydrates.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute with sterile PBS. If 0.5 mL of PBS is used, the antibody concentration will be 100 µg/mL.

Storage/Stability

Lyophilized powder can be stored intact at room temperature for several weeks. For extended storage, it should be stored at −20 °C or below. The reconstituted solution can be stored at 2-8 °C for up to 2 weeks. For longer storage, freeze in working aliquots. Repeated freezing and thawing, or storage in frost-free freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12-hours.

Product Profile

Immunocytochemistry

The recommended working dilutions are 1-10 µg/mL with the appropriate secondary reagents to detect Oligodendrocyte marker O4 in fixed differentiated rat cortical stem cells.

Flow Cytometry

Suitable at 0.25 µg/10(6) cells using rate differentiated cortical stem cells.

Note: In order to obtain best results and assay sensitivities of different techniques and preparations, determination of optimal working dilutions by titration test is recommended

References

1. Sommer, I. and Schachner, M., Monoclonal antibodies (O1 to O4) to oligodendrocyte cell surfaces: an immunocytological study in the central nervous system, Dev. Biol., 83, 311-127 (1981).
2. Ono, K., et al., Early development of the oligodendrocyte in the embryonic chick metencephalon, J. Neurosci. Res., 48, 212-225 (1997).
3. Paintlia, M.K., et al., N-acetylcysteine prevents endotoxin-induced degeneration of oligodendrocyte progenitors and hypomyelination in developing rat brain, J. Neurosci. Res., 78, 347-361 (2004).
4. Cai, Z., et al., Chronic ischemia preferentially causes white matter injury in the neonatal rat brain, Brain Res., 898, 126-135 (2001).

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