



3050 Spruce Street  
Saint Louis, Missouri 63103 USA  
Telephone 800-325-5832 • (314) 771-5765  
Fax (314) 286-7828  
email: techserv@sial.com  
sigma-aldrich.com

## Product Information

### Monoclonal Anti-Oligodendrocyte Marker O1

#### Clone O1

Purified Mouse Immunoglobulin

Product Number **O7014**

#### Product Description

Monoclonal Anti-Oligodendrocyte Marker O1 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 corpus callosum from bovine brain. The IgM fraction of the tissue culture supernatant was purified by anti-IgM affinity chromatography.

Monoclonal Anti-Oligodendrocyte Marker O1 recognizes Oligodendrocyte marker O1 by immunohistochemistry using paraformaldehyde-fixed cells, and has also been used in flow cytometry. The antibody is specific for human, mouse, rat and chicken oligodendrocyte cell surface marker O1.

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.<sup>1</sup> These antibodies have often been used together to define oligodendrocyte progenitor cells (OPCs) and immature oligodendrocytes.<sup>2-3</sup> Progenitors that are O4 antigen-positive and O1 antigen-negative have been shown to differentiate into O1 antigen-positive oligodendrocytes *in vitro*.<sup>4</sup>

#### Reagent

The antibody is supplied lyophilized from a 0.2 µm filtered solution in phosphate-buffered saline (PBS) with 5% trehalose.

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material 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 is not recommended. 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

The recommended working dilutions are 1-3 µg/ml for immunohistochemistry in cells fixed with 4% paraformaldehyde in PBS. For Flow Cytometry - Dilute this antibody to 0.1 mg/mL and add 5 µL of this solution to 1-2.5 x 10<sup>5</sup> cells in a total reaction volume not exceeding 200 µL.

**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).

MCT,PHC 05/05-1