

Alexa Fluor® 647 anti-Olig2 Antibody

Catalog# / Size	615953 / 25 µg 615954 / 100 µg
Clone	W21023A
Regulatory Status	RUO
Other Names	Oligodendrocyte transcription factor 2 (Olig2), Class B basic helix-loop-helix protein 1 (bHLHb1), Class E basic helix-loop-helix protein 19 (bHLHe19), Protein kinase C-binding protein 2 (PRKCBP2), RACK17, OLIGO2
Isotype	Rat IgG2b, κ
Description	Olig2 is a transcription factor that plays a crucial role in the development and maintenance of the central nervous system. This transcription factor is a master regulator for oligodendrocyte cell specification. Olig2 activates the expression of myelin-associated genes in oligodendrocyte lineage cells, which are essential for proper neuronal function and transmission of nerve impulses. In addition to its role in oligodendrocyte differentiation and maturation, Olig2 also regulates the development and maintenance of motor neurons in the spinal cord and contributes to the proliferation and differentiation of neural stem cells. Dysregulation of Olig2 expression has been associated with several neurological disorders, including multiple sclerosis and gliomas, highlighting its importance in maintaining normal brain function. Being located on chromosome 21, dysregulation of Olig2 is also associated with Down Syndrome.

Product Details

Verified Reactivity	Human, Rat
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	Recombinant fragment of the N-terminus of mouse Olig2
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide
Preparation	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 647 under optimal conditions.
Concentration	0.5 mg/mL
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	ICFC - Quality tested ICC - Verified
Recommended Usage	Each lot of this antibody is quality control tested by intracellular immunofluorescent staining with flow cytometric analysis . For flow cytometric staining, the suggested use of this reagent is ≤ 0.25 µg per million cells in 100 µL volume. For immunocytochemistry, a concentration range of 2.5 - 10.0 µg/mL is recommended. It is recommended that the reagent be titrated for optimal performance for each application.

* Alexa Fluor® 647 has a maximum emission of 668 nm when it is excited at 633 nm / 635 nm.

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Excitation Laser Red Laser (633 nm)

Additional Product Notes

For use in immunocytochemistry (ICC), it is recommended to fix/permeabilize with either of the following:

- Fixation Buffer (Cat. No. 420801) with 0.5 % Triton X-100
- Fixation Buffer (Cat. No. 420801) with 100% ice-cold methanol

For use in intracellular flow cytometry (ICFC), it is recommended to fixation/permeabilization with True-Phos™ Perm Buffer (Cat. No. 425401).

Antigen Details

Structure	Olig2 is a 323 amino acid protein with a predicted molecular weight of 32.38 kD.
Distribution	Nucleus
Function	Transcription factor
Cell Type	Neural Stem Cells, Oligodendrocytes
Biology Area	Cell Biology, Neuroscience, Neuroscience Cell Markers, Transcription Factors
Antigen References	1. Zhang K, <i>et al.</i> 2022. <i>Nat Commun.</i> 13:1423. 2. Xu R, <i>et al.</i> 2019. <i>Cell Stem Cell.</i> 24:908-926. 3. Sock E, Wegner M. 2021. <i>Dev Neurobiol.</i> 81:892-901. 4. Szu J, <i>et al.</i> 2021. <i>Front Neurosci.</i> 15:659601.

Gene ID

[10215](#)

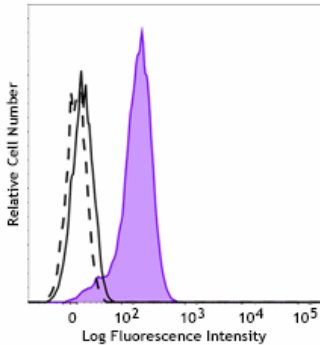
Related Protocols

- [Immunocytochemistry Staining Protocol](#)
- [Intracellular Staining With True-Phos™ Perm Buffer in Cell Suspensions Protocol](#)

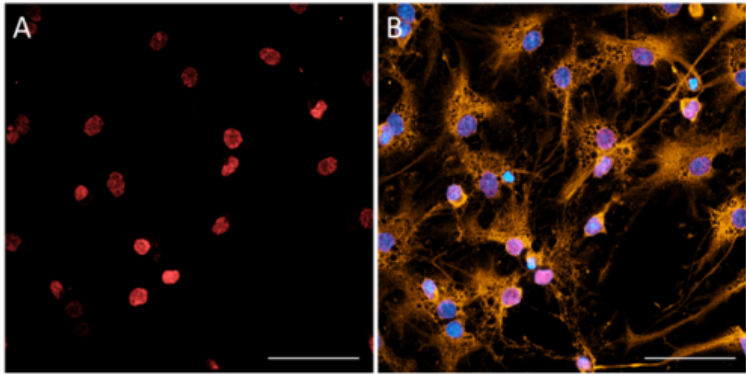
Other Formats

Purified anti-Olig2, Alexa Fluor® 647 anti-Olig2

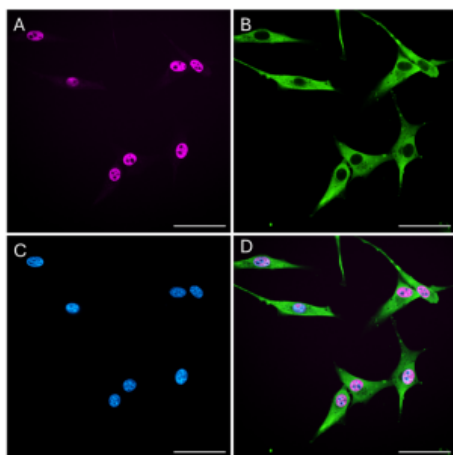
Product Data



HL-60 cells (positive cell line, filled histogram) and PC-3 cells (negative cell line, open histogram) were fixed with Fixation Buffer (Cat. No. 420801), permeabilized with True-Phos™ Perm Buffer (Cat. No. 425401) and intracellularly stained with Alexa Fluor® 647 anti-Olig2, or Purified Rat IgG2b, κ Isotype Control (open histogram, dashed line, representative of both the positive and negative cell lines) (Cat. No. 400602).



Rat cortical stem cells were induced to differentiate with recombinant human FGF-basic (Cat. No. 788404) withdrawal and were fixed with Fixation Buffer (Cat. No. 420801) for 10 minutes. Then, the cells were permeabilized with 100% ice-cold methanol for 10 minutes, and subsequently blocked with 5% FBS for 1 hour at room temperature. Cells were then stained with Alexa Fluor® 647 anti-Olig2 (clone W21023A) (panel A, red). Cells were also stained with Alexa Fluor® 594 anti-Oligodendrocyte Marker O1 (panel B, pseudo color orange) and nuclei were counterstained with DAPI (Cat. No. 422801) (panel B, blue). The images were captured and merged by a Revvity Operetta CLS™ High Content Analysis System with a 63X objective. Scale bar: 50 μm



U-87 MG cells were fixed with PFA Fixation Buffer (Cat. No. 420801) for 10 minutes and permeabilized with 100% ice-cold methanol for 10 minutes and blocked with 5% FBS for 1 hour at room temperature. Cells were then stained with Alexa Fluor® 647 anti-Olig2 (clone W21023A) (panel A). Cells were also stained with Alexa Fluor® 488 anti-Tubulin- α (Cat. No. 627906) (panel B) and nuclei were counterstained with DAPI (Cat. No. 422801) (panel C). The images were captured and merged (panel D) by a Revvity Operetta CLS™ High Content Analysis System with a 63X objective. Scale bar: 50 μ m

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