

IDH1 R132H [IHC132]

Concentrated and Prediluted Monoclonal Antibody
902-3253-112822

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The Available Product Formats				
Format	Catalog Number	Description	Dilution	Diluent
Concentrate	ACR 3253 A, C	0.1, 1.0 mL	1:100	Renoir Red
Predilute	APR 3253 AA	6.0 mL	Ready-to-use	N/A
UltraLine – For BenchMark	AVR 3253 G	6.0 mL	Ready-to-use	N/A
Q Series– For Leica BOND-III	ALR 3253 G7	7.0 mL	Ready-to-use	N/A

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Summary and Explanation:

Isocitrate dehydrogenase 1 (IDH1) is an enzyme that catalyzes the oxidative decarboxylation of isocitrate to alpha-ketoglutarate, producing NADPH.¹ However, abnormal IDH1 caused by somatic missense mutations may occur when substitution from arginine to histidine at codon 132 (IDH1 R132H) inhibits the wild-type IDH1 enzymatic activity, leading to production of 2-hydroxyglutarate, a possible oncometabolite. The accumulated oncometabolite promotes formation and malignant progression of gliomas.² IDH1 R132H detection by immunohistochemistry can be used for the diagnostic differentiation between grade II/III gliomas, secondary glioblastomas, and primary glioblastomas. Recently, studies indicated that IDH mutations along with ATRX status, and in combination with other classical biomarkers, helped refine the molecular classification of adult gliomas.³

Principle of Procedure:

Antigen detection in tissues and cells is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. After labeling the antigen with a primary antibody, a one-step or two-step detection procedure can be applied. A one-step procedure will feature an enzyme labeled polymer that binds the primary antibody. A two-step procedure will feature a linker antibody added to bind to the primary antibody. An enzyme-labeled polymer is then added to bind the linker antibody. These detections of the bound antibodies are evidenced by a colorimetric reaction.

Source: Mouse monoclonal

Species Reactivity: Human; others not tested

Clone: IHC132

Isotype: IgG1

Protein Concentration: Call for lot specific Ig concentration.

Epitope/Antigen: IDH1 R132H

Cellular Localization: Cytoplasmic

Positive Tissue Control: Astrocytoma

Known Applications:

Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

Supplied As: Buffer with protein carrier and preservative

Storage and Stability:

Store at 2°C to 8°C. The product is stable to the expiration date printed on the label, when stored under these conditions. Do not use after expiration date. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

Staining Protocol Recommendations (intelliPATH FLX® and manual use):

Peroxide Block: Block for 5 minutes with Peroxidized 1.

Pretreatment: Perform heat retrieval using Diva Decloaker. Refer to the Diva Decloaker product data sheet for specific instructions.

Protein Block (Optional): Incubate for 5-10 minutes at RT with Background Punisher.

Primary Antibody: Incubate for 30 minutes at RT.

Probe: Incubate for 10 minutes at RT with a secondary probe.

Polymer: Incubate for 10-20 minutes at RT with a tertiary polymer.

Chromogen: Incubate for 5 minutes at RT with Biocare's DAB – OR – Incubate for 5-7 minutes at RT with Warp Red.

Staining Protocol Recommendations (intelliPATH FLX and manual use) Cont'd:

Counterstain: Counterstain with hematoxylin. Rinse with deionized water. Apply Bluing Solution for 1 minute. Rinse with deionized water.

Technical Note:

This antibody, for intelliPATH FLX and manual use, has been standardized with MACH 4 detection system. Use TBS for washing steps.

Staining Protocol Recommendations (Ventana BenchMark ULTRA):

AVR3253 is intended for use with the BenchMark ULTRA. Refer to the User Manual for specific instructions for use. Recommended protocol parameters are as follows:

Template/Detection: OptiView DAB IHC

Pretreatment Protocol: CC1 64 minutes

Peroxidase: Pre-Primary Peroxidase Inhibitor

Primary Antibody: 32 minutes, 36°C

Staining Protocol Recommendations (Q Series – For Leica BOND-III):

ALR3253 is intended for use with the Leica BOND-III. Refer to the User Manual for specific instructions for use. Recommended protocol parameters are as follows:

Protocol Name: IHC Protocol F

Detection: Bond Polymer Refine

HIER: 30 min with ER2

Peroxide Block: 5 min

Marker (Primary Antibody): 15 min

Post Primary: 8 min

Polymer: 8 min

Mixed DAB Refine: 10 min

Hematoxylin: 5 min

Limitations:

This product is provided for Research Use Only (RUO) and is not for use in diagnostic procedures. Suitability for specific applications may vary and it is the responsibility of the end user to determine the appropriate application for its use.

Precautions:

1. This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC. Sodium azide (NaN₃) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for Disease Control, 1976, National Institute of Occupational Safety and Health, 1976)⁴
2. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come into contact with sensitive areas, wash with copious amounts of water.⁵
3. Microbial contamination of reagents may result in an increase in nonspecific staining.
4. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.
5. Do not use reagent after the expiration date printed on the vial.
6. The SDS is available upon request and is located at <http://biocare.net>.



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Technical Support:

Contact Biocare's Technical Support at 1-800-542-2002 for questions regarding this product.

References:

1. Li J, Huang J, *et al.* Decreased expression of IDH1-R132H correlates with poor survival in gastrointestinal cancer. *Oncotarget*. 2016 Nov; 8;7(45): 73638-50.
2. Newton H. *Handbook of Brain Tumor Chemotherapy, Molecular Therapeutics and Immunotherapy (Second Edition)*. 2018: 557-68.
3. Cai J, *et al.* ATRX, IDH1-R132H and Ki-67 immunohistochemistry as a classification scheme for astrocytic tumors. *Oncoscience*. 2016 Sep; 3(7-8):258-65.
4. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
5. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.

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