NeuN Protein (A60)

Mouse anti-human Neuronal Nuclear Protein (NeuN) Monoclonal Antibody (Clone A60)

REFERENCES AND PRESENTATIONS[1]

- **ready-to-use (manual or LabVision AutoStainer)**
  MAD-000468QD–3
  MAD-000468QD–7
  MAD-000468QD–12
- **Ready-to-use (MD-Stainer)**[2]
  MAD-000468QD-3/V
  MAD-000468QD/V
- **concentrated**
  MAD-000468Q - 1:50 recommended dilution

COMPOSITION
Anti-human Neuronal Nuclear Protein (NeuN) mouse monoclonal antibody purified from serum and prepared in 10mM PBS, pH 7.4, with 0.2% BSA and 0.09% sodium azide
INTENDED USE IVD: Immunohistochemistry (IHC) on paraffin embedded tissues. Not tested on frozen tissues or Western-Blotting
CLONE: A60
Ig ISOTYPE: Mouse IgG_1
IMMUNOGEN: Purified cell nuclei from mouse brain.
SPECIES REACTIVITY: In vitro diagnostics in humans. Not tested in other species
DESCRIPTION AND APPLICATIONS:
NeuN antibody (NEUronal Nuclei; clone A60) specifically recognizes the DNA-binding, neuron-specific protein NeuN, which is present in most CNS and PNS neuronal cell types of all vertebrates. NeuN protein distributions are apparently restricted to neuronal nuclei, perikarya and some proximal neuronal processes in both fetal and adult brain although, some neurons fail to be recognized by NeuN at all ages: INL retinal cells, Cajal-Retzius cells, Purkinje cells, inferior olivary and dentate nucleus neurons, and sympathetic ganglion cells among others.
Immunohistochemically detectable NeuN protein first appears at developmental time points that correspond with the withdrawal of the neuron from the cell cycle and/or with the initiation of terminal differentiation of the neuron. Immunoreactivity appears around E9.5 in the mouse neural tube and is extensive throughout the developing nervous system by E12.5. Strong nuclear staining suggests a nuclear regulatory protein function; however, no evidence currently exists as to whether the NeuN protein antigen has a function in the distal cytoplasm or whether it is merely synthesized there before being transported back into the nucleus. No difference between protein isolated from purified nuclei and whole brain extract on immunoblots has been found.
The A60 antibody is a neuronal widely used tumor marker. NeuN is expressed in the neuronal component of gangliogliomas , ganglioneuromas , Lhermitte-Duclos disease (gangliocytoma with cerebellar dysplasia), neurocitomas, in well-differentiated neurons and the oligodendrocytes like component present in dysembryoplastic neuroepithelial tumors . The expression in over 60% of the cells in glial tumors has been referenced in isolated cases. NeuN is often negative in the neuronal component of ganglion cell tumors in particular when it is morphologically well differentiated.
This antibody cross-reacts with other species (mouse, rat, pig , etc.)

IHC POSITIVE CONTROL: Cerebellum
VISUALIZATION: Nuclear

IHC RECOMMENDED PROCEDURE:
- 4µm thick section should be taken on charged slides; dry overnight at 60ºC
- Deparaffinise, rehydrate and HIER (heat induced epitope retrieval) – boil tissue in the Pt Module using Vitro S.A EDTA buffer pH8[3] for 20 min at 95ºC. Upon completion rinse with 3-5 changes of distilled or deionised water followed by cooling at RT for 20 min
- Endogenous peroxidase block - Blocking for 10 minutes at room temperature using peroxidase solution (ref. MAD-021540Q-125)
- Primary antibody: incubate for 10 minutes [The antibody dilution (when concentrated) and protocol may vary depending on the specimen preparation and specific application. Optimal conditions should be determined by the individual laboratory]

[1] These references are for presentation in vials of Low Density Polyethylene (LDPE) dropper. In case the products are used in automated stainers, a special reference is assigned as follows:
- / L: Cylindrical screw-cap vials (QD-3 / L, QD-7 / L, QD-12 / L).
- / N: Polygonal screw-cap vials (QD-3 / N, QD-7 / N, QD-12 / N).
For different presentations (references / volumes) please contact the supplier.

[2] For Technical specifications for MD-Stainer, please contact your distributor.

[3] Ref: MAD-004072R/D

Vitro S.A
Calle Luís Fuentes Bejarano 60 Ed. Nudo Norte Local 3 41020 Sevilla (Spain)
Tel: +34 954 933 200. vitro@vitro.bio ; www.vitro.bio

Rev.: 2020-09-21

- For detection use Master Polymer Plus Detection System (HRP) (DAB included; ref. MAD-000237QK)
- Counterstaining with haematoxylin and final mounting of the slide

STORAGE AND STABILITY: Stored at 2-8ºC. Do not freeze. Once the packaging has been opened it can be stored until the expiration date of the reagent indicated on the label. If the reagent has been stored under other conditions to those indicated in this document, the user must first check its correct performance taking into account the product warranty is no longer valid.

WARNINGS AND PRECAUTIONS:

1. Avoid contact of reagents with eyes and mucous membranes. If reagents come into contact with sensitive areas, wash with copious amounts of water.
2. This product is harmful if swallowed.
3. Consult local or state authorities with regard to recommended method of disposal.
4. Avoid microbial contamination of reagents.

SAFETY RECOMMENDATIONS

This product is intended for laboratory professional use only. The product is NOT intended to be used as a drug or for domestic purposes. The current version of the Safety Data Sheet for this product can be downloaded by searching the reference number at www.vitro.bio or can be requested at regulatory@vitro.bio.

BIBLIOGRAPHY

1. Mullen RJ, Buck CR, Smith AM. NeuN, a neuronal specific nuclear protein in vertebrates. Development. **116**: 201–211. 1992.
2. Wolf HK, Buslei R, Schmidt-Kastner R, et al. NeuN: a useful neuronal marker for diagnostic histopathology. J Histochem Cytochem.; **44**:1167–1171. 1996.
3. Wolf HK, Buslei R, Blumcke I, Wiestler OD, Pietsch T. Neural antigens in oligodendrogliomas and dysembryoplastic neuroepithelial tumors. Acta Neuropathol (Berl); **94**: 436–443. 1997.
4. Sarnat HB, Nochlin D, Born DE. Neuronal nuclear antigen (NeuN): a marker of neuronal maturation in early human fetal nervous system. Brain Dev; **20**: 88–94. 1998.
5. Parker JR, Armstrong DL, Strother D, et al. Antineuronal nuclei immunohistochemical staining patterns in childhood ependymomas. J Child Neurol; **16**: 548–552. 2001.
6. Soylemezoglu F, Onder S, Tezel GG, Berker M. Neuronal nuclear antigen (NeuN): a new tool in the diagnosis of central neurocytoma. Pathol Res Pract; **199**: 463–468. 2003.
7. Preusser M, Laggner U, Haberler C, Heinzl H, Budka H, Hainfellner JA. Comparative analysis of NeuN immunoreactivity in primary brain tumours: conclusions for rational use in diagnostic histopathology. Histopathology; **48**: 438–444. 2006.
8. Edgar MA, Rosenblum MK. The differential diagnosis of central nervous system tumors: a critical examination of some recent immunohistochemical applications. Arch Pathol Lab Med; **132**(3): 500-509. 2008.

LABEL AND BOX SYMBOLS

Explanation of the symbols of the product label and box:

	Expiration date
	Temperature limit
	Manufacturer
	Sufficient content for <n> assays
REF	Catalog number
LOT	Lot code
	Refer to the instructions of use
IVD	Medical product for *in vitro* diagnosis.
	Material safety data sheet