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REST / NRSF Antibody

Rabbit mAb
Catalog # AP91513

Product Information

Application	WB
Primary Accession	Q13127
Reactivity	Human
Clonality	Monoclonal
Other Names	NRSF; RE1 silencing transcription factor; Repressor binding to the X2 box; rest; X2 box repressor; XBR;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	121872

Additional Information

Dilution	WB 1:500~1:2000
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human REST / NRSF
Description	Transcriptional repressor which binds neuron-restrictive silencer element (NRSE) and represses neuronal gene transcription in non-neuronal cells. Restricts the expression of neuronal genes by associating with two distinct corepressors, mSin3 and CoREST, which in turn recruit histone deacetylase to the promoters of REST-regulated genes.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	REST
Synonyms	NRSF, XBR
Function	Transcriptional repressor which binds neuron-restrictive silencer element (NRSE) and represses neuronal gene transcription in non-neuronal cells (PubMed:11741002, PubMed:11779185, PubMed:12399542, PubMed:26551668, PubMed:7697725, PubMed:7871435, PubMed:8568247). Restricts the expression of neuronal genes by associating with two distinct corepressors, SIN3A and RCOR1, which in turn recruit histone deacetylase to the promoters of REST-regulated genes (PubMed:10449787, PubMed:10734093). Mediates repression by recruiting the BHC complex at RE1/NRSE sites which acts by deacetylating and demethylating specific sites on histones, thereby acting as a chromatin modifier (By similarity). Transcriptional repression by REST-CDYL via the recruitment of histone

methyltransferase EHMT2 may be important in transformation suppression (PubMed:19061646). Represses the expression of SRRM4 in non-neural cells to prevent the activation of neural- specific splicing events and to prevent production of REST isoform 3 (By similarity). Repressor activity may be inhibited by forming heterodimers with isoform 3, thereby preventing binding to NRSE or binding to corepressors and leading to derepression of target genes (PubMed:11779185). Also maintains repression of neuronal genes in neural stem cells, and allows transcription and differentiation into neurons by dissociation from RE1/NRSE sites of target genes (By similarity). Thereby is involved in maintaining the quiescent state of adult neural stem cells and preventing premature differentiation into mature neurons (PubMed:21258371). Plays a role in the developmental switch in synaptic NMDA receptor composition during postnatal development, by repressing GRIN2B expression and thereby altering NMDA receptor properties from containing primarily GRIN2B to primarily GRIN2A subunits (By similarity). Acts as a regulator of osteoblast differentiation (By similarity). Key repressor of gene expression in hypoxia; represses genes in hypoxia by direct binding to an RE1/NRSE site on their promoter regions (PubMed:27531581). May also function in stress resistance in the brain during aging; possibly by regulating expression of genes involved in cell death and in the stress response (PubMed:24670762). Repressor of gene expression in the hippocampus after ischemia by directly binding to RE1/NRSE sites and recruiting SIN3A and RCOR1 to promoters of target genes, thereby promoting changes in chromatin modifications and ischemia-induced cell death (By similarity). After ischemia, might play a role in repression of miR-132 expression in hippocampal neurons, thereby leading to neuronal cell death (By similarity). Negatively regulates the expression of SRRM3 in breast cancer cell lines (PubMed:26053433).

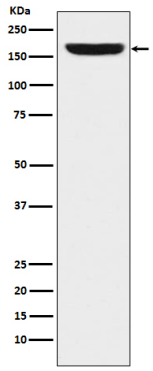
Cellular Location

Nucleus. Cytoplasm. Note=Colocalizes with ZFP90 in the nucleus (By similarity). In response to hypoxia, there is a more pronounced increase in levels in the nucleus as compared to the cytoplasm (PubMed:27531581). In aging neurons, increased levels in the nucleus as compared to the cytoplasm (PubMed:24670762, PubMed:30684677). {ECO:0000250|UniProtKB:Q8VIG1, ECO:0000269|PubMed:24670762, ECO:0000269|PubMed:27531581, ECO:0000269|PubMed:30684677} [Isoform 3]: Nucleus

Tissue Location

Expressed in neurons of the prefrontal cortex, in hippocampal pyramidal neurons, dentate gyrus granule neurons and cerebellar Purkinje and granule neurons (at protein level) (PubMed:24670762). Expressed in dopaminergic neurons of the substantia nigra (at protein level) (PubMed:30684677). Expressed in neural progenitor cells (at protein level) (PubMed:21258371). In patients suffering from Alzheimer disease, frontotemporal dementia or dementia with Lewy bodies, decreased nuclear levels have been observed in neurons of the prefrontal cortex and the hippocampus, but not in neurons of the dentate gyrus and cerebellum (at protein level) (PubMed:24670762). In patients with Parkinson disease or dementia with Lewy bodies, decreased nuclear levels have been observed in dopaminergic neurons and in cortical neurons and localization to Lewy bodies and pale bodies was detected (at protein level) (PubMed:30684677). Expressed at higher levels in weakly invasive breast cancer cell lines and at lower levels in highly invasive breast cancer lines (at protein level) (PubMed:26053433). Ubiquitous (PubMed:8568247). Expressed at higher levels in the tissues of the lymphocytic compartment, including spleen, thymus, peripheral blood lymphocytes and ovary (PubMed:8568247).

Images



Western blot analysis of REST / NRSF expression in HeLa cell lysate.

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