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RET Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1132a

Product Information

Application	WB, E
Primary Accession	P07949
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	8D10C9
Isotype	IgG1
Calculated MW	124319
Description	RET (ret proto-oncogene) is a member of the cadherin superfamily and a receptor tyrosine kinase, which are cell-surface molecules that transduce signals for cell growth and differentiation. It can undergo oncogenic activation in vivo and in vitro by cytogenetic rearrangement. Ligands that bind the Ret receptor include the glial cell line-derived neurotropic factor (GDNF) and its congeners neurturin, persephin and artemin. Alterations in the corresponding Ret gene are associated with diseases including papillary thyroid carcinoma, multiple endocrine neoplasia (type 2A and 2B), familial medullary thyroid carcinoma and a congenital developmental disorder known as Hirschsprung's disease. The Tyr905 residue located in the Ret kinase domain plays a crucial role in Ret catalytic and biological activity. Substitution of Phe for Tyr905 dramatically inhibits Ret autophosphorylation activity.
Immunogen	Purified recombinant fragment of RET (aa896-1063) expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	5979
Other Names	Proto-oncogene tyrosine-protein kinase receptor Ret, 2.7.10.1, Cadherin family member 12, Proto-oncogene c-Ret, Soluble RET kinase fragment, Extracellular cell-membrane anchored RET cadherin 120 kDa fragment, RET, CDHF12, CDHR16, PTC, RET51
Dilution	WB~~1/500 - 1/2000 E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	RET Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RET {ECO:0000303|PubMed:2660074, ECO:0000312|HGNC:HGNC:9967}
Function	Receptor tyrosine-protein kinase involved in numerous cellular mechanisms including cell proliferation, neuronal navigation, cell migration, and cell differentiation in response to glia cell line- derived growth family factors (GDNF, NRTN, ARTN, PSPN and GDF15) (PubMed:20064382, PubMed:20616503, PubMed:20702524, PubMed:21357690, PubMed:21454698, PubMed:24560924, PubMed:28846097, PubMed:28846099, PubMed:28953886, PubMed:31118272). In contrast to most receptor tyrosine kinases, RET requires not only its cognate ligands but also coreceptors, for activation (PubMed:21994944, PubMed:23333276, PubMed:28846097, PubMed:28846099, PubMed:28953886). GDNF ligands (GDNF, NRTN, ARTN, PSPN and GDF15) first bind their corresponding GDNFR coreceptors (GFRA1, GFRA2, GFRA3, GFRA4 and GFRAL, respectively), triggering RET autophosphorylation and activation, leading to activation of downstream signaling pathways, including the MAPK- and AKT-signaling pathways (PubMed:21994944, PubMed:23333276, PubMed:24560924, PubMed:25242331, PubMed:28846097, PubMed:28846099, PubMed:28953886). Acts as a dependence receptor via the GDNF-GFRA1 signaling: in the presence of the ligand GDNF in somatotrophs within pituitary, promotes survival and down regulates growth hormone (GH) production, but triggers apoptosis in absence of GDNF (PubMed:20616503, PubMed:21994944). Required for the molecular mechanisms orchestration during intestine organogenesis via the ARTN-GFRA3 signaling: involved in the development of enteric nervous system and renal organogenesis during embryonic life, and promotes the formation of Peyer's patch-like structures, a major component of the gut-associated lymphoid tissue (By similarity). Mediates, through interaction with GDF15-receptor GFRAL, GDF15-induced cell-signaling in the brainstem which triggers an aversive response, characterized by nausea, vomiting, and/or loss of appetite in response to various stresses (PubMed:28846097, PubMed:28846099, PubMed:28953886). Modulates cell adhesion via its cleavage by caspase in sympathetic neurons and mediates cell migration in an integrin (e.g. ITGB1 and ITGB3)-dependent manner (PubMed:20702524, PubMed:21357690). Also active in the absence of ligand, triggering apoptosis through a mechanism that requires receptor intracellular caspase cleavage (PubMed:21357690). Triggers the differentiation of rapidly adapting (RA) mechanoreceptors (PubMed:20064382). Involved in the development of the neural crest (By similarity). Regulates nociceptor survival and size (By similarity). Phosphorylates PTK2/FAK1 (PubMed:21454698).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Endosome membrane; Single-pass type I membrane protein Note=Predominantly located on the plasma membrane (PubMed:23333276, PubMed:9575150). In the presence of SORL1 and GFRA1, directed to endosomes (PubMed:23333276).

References

1. Young HM. Anderson RB. Anderson CR. Auton Neurosci. 2004, May 31,112(1-2):1-14. Review. 2. Myers SM. Mulligan LM. Cancer Res. 2004, Jul 1,64(13):4453-63.

Images

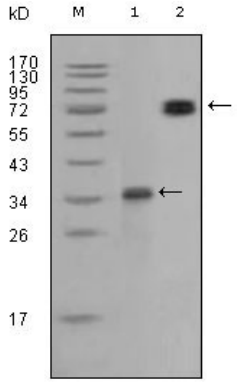

Figure 1: Western blot analysis using RET mouse mAb against truncated RET recombinant protein (1) and RET (aa658-1063)-hIgGFc transfected CHO-K1 cell lysate (2).