

34-1148: Monoclonal Antibody to GAP43 (Clone: 3H14)

Clonality :	Monoclonal
Clone Name :	3H14
Application :	ICC/IF,IHC,WB
Reactivity :	Human
Gene :	GAP43
Gene ID :	2596
Uniprot ID :	P17677
Alternative Name :	Axonal membrane protein GAP-43, Growth-associated protein 43, Neural phosphoprotein B-50, pp46
Isotype :	Mouse IgM
Immunogen Information :	Recombinant full-length Human GAP43

Description

GAP43 is an abundant protein which is found heavily concentrated in developing neurons, in particular at the growing tips, the growth cones. One group discovered it since it becomes unregulated during the regeneration of the toad optic nerve, and named it "growth associated protein 43", the 43 referring to the apparent molecular weight on SDS-PAGE gels (1). Due to unusual mobility on SDS-PAGE GAP43 was independently discovered by several other groups and therefore has several alternate names, such as protein F1, pp46, neuromodulin, neural phosphoprotein B-50 and calmodulin-binding protein P-57, the numbers 46, 50 and 57 reflecting the apparent SDS-PAGE molecular weight (2). GAP43 is a major protein kinase C substrate, binds calmodulin avidly and may be anchored to the plasma membrane by reversible palmitoylation on two Cys residues close to the N-terminus (3,4). Knock out of the GAP43 gene in mice is lethal early in postnatal life and is associated with defects in axonal pathfinding (5). GAP43 is one of a large family of "intrinsically disordered proteins" which typically have little defined structure unless they are bound to a more structured partner (6). The 34-1148 antibody was made against the full length recombinant human protein and binds to GAP43 in rodents and other mammalian species. It binds strongly to growth cones and axonal processes of neurons in cell culture and to synaptic regions in sectioned material.

Product Info

Amount :	50 µl / 100 µl
Content :	Purified antibody at 1mg/ml in 50% PBS, 50% glycerol plus 5mM NaN3
Storage condition :	Stable at 4°C for one year, for longer term store at -20°C

Application Note

WB: 1:1,000-5,000 IF/ICC and IHC: 1:1,000-5,000

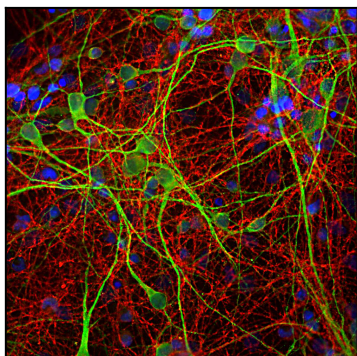


Figure-1: Immunofluorescent analysis of cortical neuron-glia cell culture from E20 rat stained with mouse mAb to GAP43, 34-1148, dilution 1:1,000, in red, and costained with chicken pAb to MAP2, 34-1064, dilution 1:10,000, in green. The blue is DAPI staining of nuclear DNA. GAP43 antibody labels protein expressed in the axonal membrane of the neuronal cells, while the MAP2 antibody stains dendrites and perikarya of neurons.

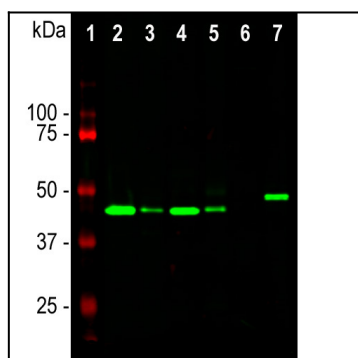


Figure-2: Western blot analysis of different tissue and cell lysates using mouse mAb to GAP43, 34-1148, dilution 1:5,000, in green: [1] protein standard (red), [2] rat brain, [3] rat spinal cord, [4] mouse brain, [5] mouse spinal cord, [6] C6 cells, [7] SH-SY5Y cells. The single band at the 43kDa mark corresponds to the GAP43 protein. The protein is expressed in rodent and human neurons and neuronal derived cells but not in C6 cells which are of glial origin.