Product Information

GRP94 Monoclonal Antibody (Clone 9G10)

Item No. 10011424

Contents: This vial contains protein G affinity-purified mouse IgG at a concentration of 1 mg/ml in PBS, pH 7.2, containing 0.09% sodium azide and 50% glycerol.
Synonym: Glucose Regulated Protein, GP96
Antigen: Purified recombinant GPR94 protein
Host: Rat, clone 9G10
Isotype: IgG_{2a}
Cross Reactivity: (+) Human, mouse, rat, bovine, canine, chicken, guinea pig, hamster, horse, monkey, porcine, rabbit, ovine, and *Xenopus* GRP94. Detects an 98 kDa protein corresponding to the molecular mass of GRP94 on SDS-PAGE immunoblots. Does not detect human Hsp90, GRP74, or GRPE from *E. coli*.
Stability: ≥1 year at -20°C
Application: Western blot, immunoprecipitation, and flow cytometry.[1-7] The recommended starting concentration for western blot is 0.5 µg/ml, which was shown to be sufficient for the detection of GRP94 in 20 µg of HeLa lysate. Optimal working dilutions for other applications should be determined empirically.

Glucose regulated protein 94 (GRP94) is a constitutively expressed endoplasmic reticulum (ER) lumenal protein that is up-regulated in response to cellular stress such as heat shock, oxidative stress or glucose depletion. GRP94 is thought to play a role in protein translocation to the ER, in their subsequent folding and assembly, and in regulating protein secretion.[8] GRP94 also plays a role in antigen presentation by accessing the endogenous pathway and eliciting specific cytotoxic T lymphocyte (CTL) responses to chaperone bound peptides *via* the major histocompatibility complex (MHC) class I pathway.[9]

GRP94 is a member of the Hsp90 family of stress proteins and shares sequence homology with its cytosolic equivalent, Hsp90.[10] Both Hsp90 and GRP94 are calcium binding proteins.[11] Despite sharing 50% sequence homology over its N domains and complete conservation in its ligand binding domains with Hsp90, GRP94, and Hsp90 differ in their interactions with regulatory ligands as GRP94 has weak ATP binding and hydrolysis activity.[12]

GRP94 exists as a homodimer and the two subunits interact at two distinct intermolecular sites the C-terminal dimerization domains and the N-terminal interacts with the middle domain of opposing subunits.[13] GRP94 contains a carboxy terminal KDEL (Lys-Asp-Glu-Leu) sequence which is believed to aid in its retention in the ER.[14]

References

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