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GC Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8937C

Product Information

Application	WB, FC, IHC-P-Leica, E
Primary Accession	P04062
Other Accession	Q70KH2, Q2KHZ8
Reactivity	Human, Mouse
Predicted	Pig, Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB21567
Calculated MW	59716
Antigen Region	337-365

Additional Information

Gene ID	2629
Other Names	Glucosylceramidase, Acid beta-glucosidase, Alglucerase, Beta-glucocerebrosidase, Beta-GC, D-glucosyl-N-acylsphingosine glucohydrolase, Imiglucerase, GBA, GC, GLUC
Target/Specificity	This GC antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 337-365 amino acids of human GC.
Dilution	WB~~1:1000 FC~~1:10~50 IHC-P-Leica~~1:500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	GC Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	GBA1 (HGNC:4177)
Synonyms	GBA, GC, GLUC

Function	Glucosylceramidase that catalyzes, within the lysosomal compartment, the hydrolysis of glucosylceramides/GlcCers (such as beta-D-glucosyl-(11')-N-acylsphing-4-enine) into free ceramides (such as N-acylsphing-4-enine) and glucose (PubMed:15916907, PubMed:24211208, PubMed:32144204, PubMed:9201993). Plays a central role in the degradation of complex lipids and the turnover of cellular membranes (PubMed:27378698). Through the production of ceramides, participates in the PKC-activated salvage pathway of ceramide formation (PubMed:19279011). Catalyzes the glucosylation of cholesterol, through a transglucosylation reaction where glucose is transferred from GlcCer to cholesterol (PubMed:24211208, PubMed:26724485, PubMed:32144204). GlcCer containing mono-unsaturated fatty acids (such as beta-D-glucosyl-N-(9Z-octadecenoyl)-sphing-4-enine) are preferred as glucose donors for cholesterol glucosylation when compared with GlcCer containing same chain length of saturated fatty acids (such as beta-D-glucosyl-N-octadecanoyl-sphing-4-enine) (PubMed:24211208). Under specific conditions, may alternatively catalyze the reverse reaction, transferring glucose from cholesteryl 3-beta-D-glucoside to ceramide (Probable) (PubMed:26724485). Can also hydrolyze cholesteryl 3-beta-D- glucoside producing glucose and cholesterol (PubMed:24211208, PubMed:26724485). Catalyzes the hydrolysis of galactosylceramides/GalCers (such as beta-D-galactosyl-(11')-N- acylsphing-4-enine), as well as the transfer of galactose between GalCers and cholesterol in vitro, but with lower activity than with GlcCers (PubMed:32144204). Contrary to GlcCer and GalCer, xylosylceramide/XylCer (such as beta-D-xyosyl-(11')-N-acylsphing-4- enine) is not a good substrate for hydrolysis, however it is a good xylose donor for transxylosylation activity to form cholesteryl 3-beta- D-xyloside (PubMed:33361282).
Cellular Location	Lysosome membrane; Peripheral membrane protein; Lumenal side. Note=Interaction with saposin-C promotes membrane association (PubMed:10781797). Targeting to lysosomes occurs through an alternative MPR-independent mechanism via SCARB2 (PubMed:18022370).

Background

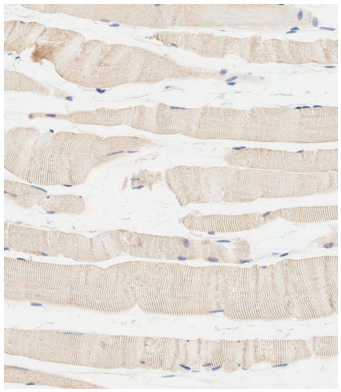
GC is a protein that cleaves the beta-glucosidic linkage of glycosylceramide, an intermediate in glycolipid metabolism.

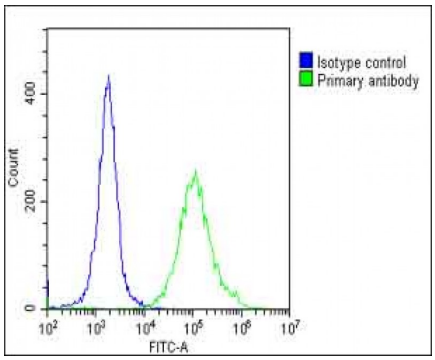
References

Jamrozik,Z., et.al., J. Neurol. 257 (3), 459-460 (2010)
Mao,X.Y., et.al., Neurosci. Lett. 469 (2), 256-259 (2010)

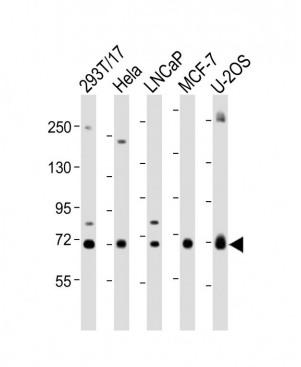
Images

Immunohistochemical analysis of paraffin-embedded human skeletal muscle tissue using AP8937C performed on the Leica® BOND RXm. Samples were incubated with primary antibody(1/500) for 1 hours at room temperature. A undiluted biotinylated CRF Anti-Polyvalent HRP Polymer antibody was used as the secondary antibody.





Overlay histogram showing Hela cells stained with AP8937C (green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AP8937C , 1:25 dilution) for 60 min at 37ºC. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(1583138) at 1/200 dilution for 40 min at 37ºC. Isotype control antibody (blue line) was rabbit IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.



All lanes : Anti-GC Antibody (Center) at 1:2000 dilution Lane 1: 293T/17 whole cell lysate Lane 2: Hela whole cell lysate Lane 3: LNCaP whole cell lysate Lane 4: MCF-7 whole cell lysate Lane 5: U-2OS whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 60 kDa Blocking/Dilution buffer: 5% NFDM/TBST.