

# GILZ (G-5): sc-133215

## BACKGROUND

Glucocorticoid-induced leucine zipper (GILZ) is a leucine zipper protein expressed in normal lymphocytes from thymus, spleen and lymph nodes. It is absent in nonlymphoid tissues, including brain, liver and kidney. GILZ mediates the immunosuppressive effects of glucocorticoid hormones; its expression is induced in T cells by dexamethasone. GILZ protects T cells from an anti-CD3 antibody-induced apoptosis by inhibiting Fas and Fas ligand expression. It interferes with Egr-2, Egr-3, NFAT/AP-1-inducible transcription factors and AP-1. The interaction of GILZ with c-Fos and c-Jun inhibits the binding of active AP-1 to its DNA consensus site *in vitro*. GILZ also binds NF $\kappa$ B subunits and inhibits the NF $\kappa$ B nuclear translocation. It inhibits T cell receptor-induced interleukin-2/interleukin-2 receptor expression. The binding of GILZ to Raf-1 prevents Raf-MEK-ERK activation in the MAPK pathway. GILZ is expressed by normal macrophages in nonlymphoid tissues and by tumor-infiltrating macrophages in Burkitt lymphomas. The gene encoding human GILZ maps to chromosome Xq22.3.

## REFERENCE

1. D'Adamio, F., et al. 1997. A new dexamethasone-induced gene of the leucine zipper family protects T lymphocytes from TCR/CD3-activated cell death. *Immunity* 7: 803-812.
2. Mittelstadt, P.R. and Ashwell, J.D. 2001. Inhibition of AP-1 by the glucocorticoid-inducible protein GILZ. *J. Biol. Chem.* 276: 29603-29610.

## SOURCE

GILZ (G-5) is a mouse monoclonal antibody raised against amino acids 1-134 representing full length GILZ of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GILZ (G-5) is available conjugated to agarose (sc-133215 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; for HRP (sc-133215 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133215 PE), fluorescein (sc-133215 FITC), Alexa Fluor<sup>®</sup> 488 (sc-133215 AF488), Alexa Fluor<sup>®</sup> 546 (sc-133215 AF546), Alexa Fluor<sup>®</sup> 594 (sc-133215 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-133215 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-133215 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-133215 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

GILZ (G-5) is recommended for detection of GILZ and all other TSC22 family members of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

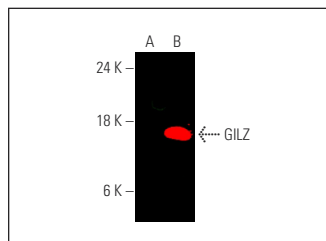
Molecular Weight of GILZ: 18 kDa.

Positive Controls: GILZ (h): 293T Lysate: sc-111443.

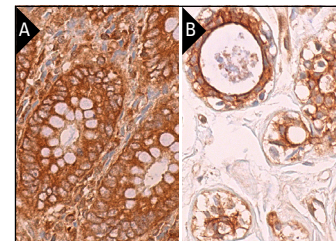
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



GILZ (G-5): sc-133215. Near-infrared western blot analysis of GILZ expression in non-transfected: sc-117752 (A) and human GILZ transfected: sc-111443 (B) 293T whole cell lysates. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagent used: m-IgG $\kappa$ : BP-CFL 790: sc-516181.



GILZ (G-5): sc-133215. Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic and nuclear staining of glandular cells and lymphoid cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic staining of glandular cells and myoepithelial cells (B).

## SELECT PRODUCT CITATIONS

1. Ngo, D., et al. 2013. Glucocorticoid-induced leucine zipper (GILZ) regulates testicular FOXO1 activity and spermatogonial stem cell (SSC) function. *PLoS ONE* 8: e59149.
2. Cheng, Q., et al. 2013. GILZ overexpression inhibits endothelial cell adhesive function through regulation of NF $\kappa$ B and MAPK activity. *J. Immunol.* 191: 424-433.
3. Fan, H., et al. 2014. Macrophage migration inhibitory factor inhibits the antiinflammatory effects of glucocorticoids via glucocorticoid-induced leucine zipper. *Arthritis Rheumatol.* 66: 2059-2070.
4. Calmette, J., et al. 2016. Glucocorticoid-induced leucine zipper protein controls macropinocytosis in dendritic cells. *J. Immunol.* 197: 4247-4256.
5. André, F., et al. 2017. Metabolic rewiring in cancer cells overexpressing the glucocorticoid-induced leucine zipper protein (GILZ): activation of mitochondrial oxidative phosphorylation and sensitization to oxidative cell death induced by mitochondrial targeted drugs. *Int. J. Biochem. Cell Biol.* 85: 166-174.
6. La, H.M., et al. 2018. GILZ-dependent modulation of mTORC1 regulates spermatogonial maintenance. *Development* 145: dev165324.
7. Nikolou, N., et al. 2020. Glucocorticoids regulate AKR1D1 activity in human liver *in vitro* and *in vivo*. *J. Endocrinol.* 245: 207-218.
8. Yasukawa, T., et al. 2020. NRBP1-containing CRL2/CRL4A regulates Amyloid  $\beta$  production by targeting BRI2 and BRI3 for degradation. *Cell Rep.* 30: 3478-3491.e6.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

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