SANTA CRUZ BIOTECHNOLOGY, INC.

C4α (C-2): sc-271181

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The complement component proteins C3, C4 and C5 are potent anaphylatoxins that are released during complement activation, a system of ligand-surface protein interactions specific to cells of hematopoietic lineage. These proteins belong to the α-2-Macroglobulin family, but retain distinctive features including an anaphylatoxin domain and a netrin (NTR) domain. The human C4 gene is polymorphic at two loci, C4A and C4B, mapping to chromosome 6p21.33. C4A expresses the Rodgers (Rg) blood group Ag, while C4B expresses the Chido (Ch) blood group Ag. C4 is expressed as a precursor that is cleaved into α, β and γ chains, all of which are non-identical cleavage products. The α chain of C4 may be cleaved to produce an acidic isotype, C4α, which reacts with amino groups, and a basic isotype, C4b, which reacts with hydroxyl groups. Deficiency in the C4 gene is associated with autoimmune or immune complex disorders, such as systemic lupus erythematosus.

REFERENCES

1. Hugli, T.E. 1984. Structure and function of the anaphylatoxins. Springer Semin. Immunopathol. 7: 193-219.
2. Yu, C.Y., et al. 1986. Structural basis of the polymorphism of human complement components C4A and C4B: gene size, reactivity and antigenicity. EMBO J. 5: 2873-2881.
3. Andoh, A., et al. 1997. Molecular characterization of complement components (C3, C4 and factor B) in human saliva. J. Clin. Immunol. 17: 404-407.
4. Martinez, O.P., et al. 2001. Genetics of human complement component C4 and evolution the central MHC. Front. Biosci. 6: D904-D913.
5. Blanchong, C.A., et al. 2001. Genetic, structural and functional diversities of human complement components C4A and C4B and their mouse homologs, Slp and C4. Int. Immunopharmacol. 1: 365-392.

CHROMOSOMAL LOCATION

Genetic locus: C4A/C4B (human) mapping to 6p21.33; C4a/C4b (mouse) mapping to 17 B1.

SOURCE

C4α (C-2) is a mouse monoclonal antibody raised against amino acids 1146-1300 of C4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

C4α (C-2) is available conjugated to agarose (sc-271181 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271181 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271181 PE), fluorescein (sc-271181 FITC), Alexa Fluor® 488 (sc-271181 AF488), Alexa Fluor® 546 (sc-271181 AF546), Alexa Fluor® 594 (sc-271181 AF594) or Alexa Fluor® 647 (sc-271181 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271181 AF680) or Alexa Fluor® 790 (sc-271181 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

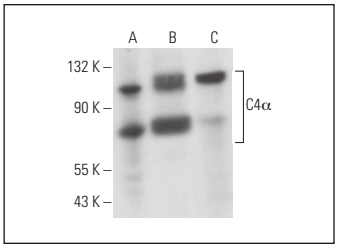
C4α (C-2) is recommended for detection of C4 mono precursor, C4 α chain and C4b of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for C4 siRNA (h): sc-42844, C4 siRNA (m): sc-42845, C4 shRNA Plasmid (h): sc-42844-SH, C4 shRNA Plasmid (m): sc-42845-SH, C4 shRNA (h) Lentiviral Particles: sc-42844-V and C4 shRNA (m) Lentiviral Particles: sc-42845-V.

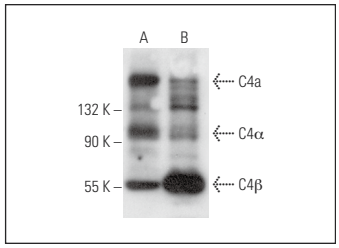
Molecular Weight of C4α: 98 kDa.

Positive Controls: human liver extract: sc-363766, human kidney extract: sc-363764 or Hep G2 cell lysate: sc-2227.

DATA



C4α (C-2): sc-271181. Western blot analysis of C4α expression in human adrenal gland (**A**), mouse adrenal gland (**B**) and human kidney (**C**) tissue extracts.



C4α (C-2): sc-271181. Western blot analysis of C4α expression in Hep G2 whole cell lysate (**A**) and human liver tissue extract (**B**).

SELECT PRODUCT CITATIONS

1. Feng, P., et al. 2021. Early pregnancy regulates expression of complement components in ovine liver. Anim. Sci. J. 92: e13660.
2. Zhang, L., et al. 2022. Complement regulation in ovine lymph nodes during early pregnancy. Exp. Ther. Med. 23: 166.
3. Zhang, L., et al. 2022. Effects of early pregnancy on the complement system in the ovine thymus. Vet. Res. Commun. 46: 137-145.
4. Han, X., et al. 2022. Selection of early pregnancy specific proteins and development a rapid immunochromatographic test strip in cows. Theriogenology 187: 127-134.
5. Cheema, A.K., et al. 2022. Identification of novel biomarkers for acute radiation injury using multiomics approach and nonhuman primate model. Int. J. Radiat. Oncol. Biol. Phys. 114: 310-320.

STORAGE

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

RESEARCH USE

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