

# E2A (G-2): sc-133075

## BACKGROUND

Transcription factor 3 (E47, E12, E2A immunoglobulin enhancer binding factors E12/E47, E2A, ITF1, TCF3) influences gene expression during B cell maturation. Differentiation of myogenic cells is regulated by multiple positively and negatively acting factors. One well characterized family of helix-loop-helix (HLH) proteins known to play an important role in the regulation of muscle cell development includes MyoD, myogenin, Myf-5 and myoD. MyoD transcription factors form heterodimers with products of a more widely expressed family of bHLH genes, the E family, which consists of at least three distinct genes: E2A, IF2 and HEB. MyoD-E heterodimers bind avidly to consensus (CANNTG) E box target sites that are functionally important elements in the upstream regulatory sequences of many muscle-specific terminal differentiation genes. Both homo- and hetero-oligomers of these proteins are able to distinguish very closely related E box proteins and are believed to play important roles in lineage-specific gene expression.

## REFERENCE

1. Braun, T., et al. 1989. A novel human muscle factor related to but distinct from MyoD1 induces myogenic conversion in 10T1/2 fibroblasts. *EMBO J.* 8: 701-709.
2. Wright, W.E., et al. 1989. Myogenin, a factor regulating myogenesis, has a domain homologous to MyoD. *Cell* 56: 607-617.
3. Murre, C., et al. 1989. Interactions between heterologous helix-loop-helix proteins generate complexes that bind specifically to a common DNA sequence. *Cell* 58: 537-544.

## CHROMOSOMAL LOCATION

Genetic locus: TCF3 (human) mapping to 19p13.3.

## SOURCE

E2A (G-2) is a mouse monoclonal antibody raised against amino acids 1-649 of E2A of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-133075 X, 200 µg/0.1 ml.

E2A (G-2) is available conjugated to agarose (sc-133075 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133075 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133075 PE), fluorescein (sc-133075 FITC), Alexa Fluor<sup>®</sup> 488 (sc-133075 AF488), Alexa Fluor<sup>®</sup> 546 (sc-133075 AF546), Alexa Fluor<sup>®</sup> 594 (sc-133075 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-133075 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-133075 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-133075 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## RESEARCH USE

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

## APPLICATIONS

E2A (G-2) is recommended for detection of E2A isoforms E12 and E47 of 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), 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).

Suitable for use as control antibody for E2A siRNA (h): sc-35245, E2A shRNA Plasmid (h): sc-35245-SH and E2A shRNA (h) Lentiviral Particles: sc-35245-V.

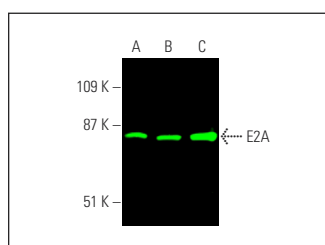
E2A (G-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of E2A: 67 kDa.

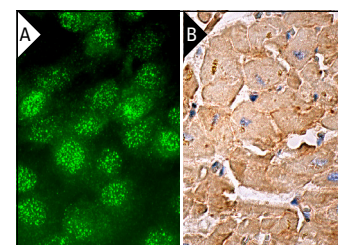
Molecular Weight (observed) of E2A: 63-92 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Raji whole cell lysate: sc-364236 or Ramos cell lysate: sc-2216.

## DATA



E2A (G-2): sc-133075. Near-infrared western blot analysis of E2A expression in Jurkat (A), Raji (B) and Ramos (C) whole cell lysates. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



E2A (G-2): sc-133075. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (B).

## SELECT PRODUCT CITATIONS

1. Cázarez-Ordoñez, V., et al. 2015. A *cis*-acting element in the promoter of human ether a-go-go 1 potassium channel gene mediates repression by calcitriol in human cervical cancer cells. *Biochem. Cell Biol.* 93: 94-101.
2. Studd, J.B., et al. 2019. Genetic predisposition to B-cell acute lymphoblastic leukemia at 14q11.2 is mediated by a CEBPE promoter polymorphism. *Leukemia* 33: 1-14.
3. Zhou, D., et al. 2021. TCF3 regulates the proliferation and apoptosis of human spermatogonial stem cells by targeting PODXL. *Front. Cell Dev. Biol.* 9: 695545.
4. Li, F., et al. 2023. FBXL2 promotes E47 protein instability to inhibit breast cancer stemness and paclitaxel resistance. *Oncogene* 42: 339-350.

## STORAGE

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