

# E2A (D-7): sc-133074

## 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 Myo D, myogenin, Myf-5 and myoD. Myo D 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. Myo D-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.

## CHROMOSOMAL LOCATION

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

## SOURCE

E2A (D-7) 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-133074 X, 200 µg/0.1 ml.

## STORAGE

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

## APPLICATIONS

E2A (D-7) 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 (D-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of E2A: 67 kDa.

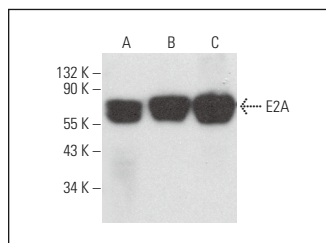
Molecular Weight (observed) of E2A: 63-92 kDa.

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

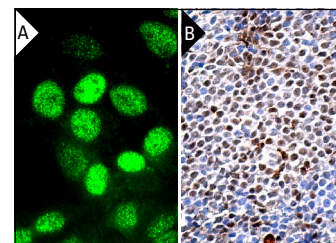
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



E2A (D-7): sc-133074. Western blot analysis of E2A expression in Jurkat (A), Raji (B) and Ramos (C) whole cell lysates.



E2A (D-7): sc-133074. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of cells in germinal and non-germinal centers (B).

## SELECT PRODUCT CITATIONS

- Xu, J., et al. 2021. E47 upregulates ΔNp63α to promote growth of squamous cell carcinoma. *Cell Death Dis.* 12: 381.
- Kim, S., et al. 2023. DNA-guided transcription factor cooperativity shapes face and limb mesenchyme. *bioRxiv*. E-published.
- Priam, P., et al. 2024. Smarcd1 subunit of SWI/SNF chromatin-remodeling complexes collaborates with E2a to promote murine lymphoid specification. *Dev. Cell* 59: 3124-3140.e8.
- Kim, S., et al. 2024. DNA-guided transcription factor cooperativity shapes face and limb mesenchyme. *Cell* 187: 692-711.e26.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See **E2A (G-2): sc-133075** for E2A antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.