

## E2A (Yae): sc-416

### 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 andherculin). 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.

### REFERENCES

- 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.
- Wright, W.E., et al. 1989. Myogenin, a factor regulating myogenesis, has a domain homologous to MyoD. *Cell* 56: 607-617.

### CHROMOSOMAL LOCATION

Genetic locus: TCF3 (human) mapping to 19p13.3; Tcf3a (mouse) mapping to 10 C1.

### SOURCE

E2A (Yae) is a mouse monoclonal antibody epitope corresponding to amino acids 195-208 mapping within a region of E47 (Pan-1) of human origin that is conserved between E47 and E12 (Pan-2).

### 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-416 X, 200 µg/0.1 ml.

E2A (Yae) is available conjugated to agarose (sc-416 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-416 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-416 PE), fluorescein (sc-416 FITC), Alexa Fluor® 488 (sc-416 AF488), Alexa Fluor® 546 (sc-416 AF546), Alexa Fluor® 594 (sc-416 AF594) or Alexa Fluor® 647 (sc-416 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-416 AF680) or Alexa Fluor® 790 (sc-416 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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### STORAGE

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

### APPLICATIONS

E2A (Yae) is recommended for detection of ITF-1, and E2A isoforms E12 and E47 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for E2A siRNA (h): sc-35245, E2A siRNA (m): sc-35246, E2A shRNA Plasmid (h): sc-35245-SH, E2A shRNA Plasmid (m): sc-35246-SH, E2A shRNA (h) Lentiviral Particles: sc-35245-V and E2A shRNA (m) Lentiviral Particles: sc-35246-V.

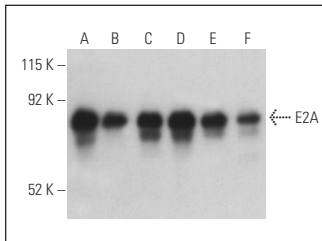
E2A (Yae) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of E2A: 67 kDa.

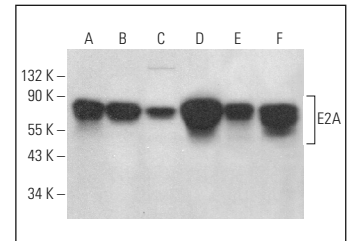
Molecular Weight (observed) of E2A: 63-92 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or Raji whole cell lysate: sc-364236.

### DATA



E2A (Yae): sc-416. Western blot analysis of E2A expression in Jurkat (A), Raji (B), MOLT-4 (C), SUP-T1 (D), K-562 (E) and HeLa (F) whole cell lysates. Detection reagent used: m-IgG<sub>1</sub> BP-HRP: sc-525408.



E2A (Yae): sc-416. Western blot analysis of E2A expression in Jurkat (A), Raji (B), NIH/3T3 (C), Daudi (D), MOLT-4 (E) and SUP-T1 (F) whole cell lysates.

### SELECT PRODUCT CITATIONS

- Hofmann, T.J. and Cole, M.D. 1996. The TAL1/Scf basic helix-loop-helix protein blocks myogenic differentiation and E-box dependent transactivation. *Oncogene* 13: 617-624.
- Nie, L., et al. 2016. Thymosin β4 impeded murine stem cell proliferation with an intact cardiovascular differentiation. *J. Huazhong Univ. Sci. Technol. Med. Sci.* 36: 328-334.
- Grundström, C., et al. 2018. ETS1 and PAX5 transcription factors recruit AID to Igh DNA. *Eur. J. Immunol.* 48: 1687-1697.
- Naik, A.K., et al. 2019. Hierarchical assembly and disassembly of a transcriptionally active RAG locus in CD4<sup>+</sup>CD8<sup>+</sup> thymocytes. *J. Exp. Med.* 216: 231-243.
- Rao, C., et al. 2020. The transcription factor E2A drives neural differentiation in pluripotent cells. *Development* 147: dev184093.

### RESEARCH USE

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