SANTA CRUZ BIOTECHNOLOGY, INC.

p-MEF-2 (Ser 59)-R: sc-13919-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myogenic helix-loop-helix (HLH) transcription factors of the myogenin/MyoD class have been studied in detail over the past few years. Muscle gene induction by these proteins depends upon sequence-specific DNA binding at the E box DNA element present in many muscle enhancers and promoters. MEF-2 is a muscle-specific DNA binding protein that recognizes an A+T-rich sequence [CTA (A/T)4 TAG] localized in the control regions of numerous muscle-specific genes. MEF-2 belongs to the MADS (MCM1, Agamous, Deficiens and serum-response factor) box family of transcription factors. The MEF-2 proteins comprise several alternatively spliced isoforms from the MEF-2 gene and a related factor encoded by the related gene xMEF-2. MEF-2 expression is ubiquitous but preferential in skeletal and cardiac muscle cells. The Serine 59 residue, located between the MADS and MEF-2 domains of MEF-2C, is phosphorylated *in vivo* and can be phosphorylated *in vitro* by casein kinase-II (CKII). Phosphorylation of this site enhances the DNA binding and transcriptional activity of MEF-2C by increasing its DNA binding activity 5-fold.

CHROMOSONAL LOCATION

Genetic locus: MYEF2 (human) mapping to 15q21.1; Myef2 (mouse) mapping to 2 F1.

SOURCE

p-MEF-2 (Ser 59)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 59 phosphorylated MEF-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-13919 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13919 X, 200 µg/0.1 ml.

APPLICATIONS

p-MEF-2 (Ser 59)-R is recommended for detection of Ser 59 phosphorylated MEF-2 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)], 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).

p-MEF-2 (Ser 59)-R is also recommended for detection of correspondingly phosphorylated MEF-2 in additional species, including equine, canine, bovine, porcine and avian.

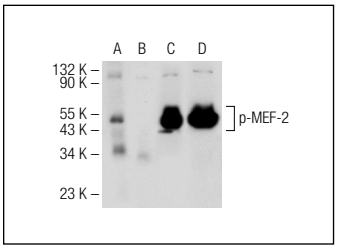
p-MEF-2 (Ser 59) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of p-MEF-2: 40-65 kDa.

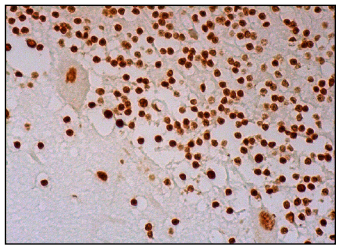
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



Western blot analysis of MEF-2 phosphorylation in untreated (**A**,**C**), and lambda protein phosphatase (sc-200312A) treated (**B**,**D**) K-562 whole cell lysates. Antibodies tested include p-MEF-2 (Ser 59)-R: sc-13919-R (**A**,**B**) and MEF-2 (C-21): sc-313 (**C**,**D**).



p-MEF-2 (Ser 59)-R: sc-13919-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing nuclear staining of Purkinje cells, cells in granular layer and cells in molecular layer.

SELECT PRODUCT CITATIONS

1. Holmes, W.F., et al. 2003. Early events in the induction of apoptosis in ovarian carcinoma cells by CD437: activation of the p38 MAP kinase signal pathway. Oncogene 22: 6377-6386.
2. Crespo-Biel, N., et al. 2007. 3-Nitropropionic acid activates calpain/cdk5 pathway in rat striatum. Neurosci. Lett. 421: 77-81.
3. Crespo-Biel, N., et al. 2009. Evidence of calpain/cdk5 pathway inhibition by lithium in 3-nitropropionic acid toxicity *in vivo* and *in vitro.* Neuropharmacology 56: 422-428.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.