**PFK-1 (E-4): sc-377346**

**BACKGROUND**

Phosphofructokinases (PFK) are regulatory glycolytic enzymes that convert fructose 6-phosphate and ATP into fructose 1,6-bisphosphate (through PFK-1), fructose 2,6-bisphosphate (through PFK-2), and ADP. Human PFK-1 is tetrameric and isoforms include, PFK-1 muscle (PFKM, PFK-A), PFK-1 liver (PFKL, PFK-B), and PFK-1 platelet (PFKP, PFK-C, PFKF). PFK-1 is inhibited by ATP and citrate (from the tricarboxylic acid cycle). PFK-1 undergoes activation in the presence of elevated AMP. The most potent activator is fructose-2,6-bisphosphate, which is produced by PFK-2 from the same substrate, fructose 6-phosphate. PFK-2 is bifunctional and a key regulator for PFK-1. PFK-2 catalyzes the synthesis of fructose-2,6-bisphosphate, and contains fructose-2,6-bisphosphate activity that catalyzes the degradation of fructose-2,6-bisphosphate. PFK-2 is dimeric and isoforms include PFK-2 liver (PFKF81, PFKX), PFK-2 cardiac (PFKF2), PFK-2 placental (PFKF83, inducible PFK-2) and PFK-2 testis (PFKF84).

**CHROMOSOMAL LOCATION**

Genetic locus: PFKM (human) mapping to 12q13.11; Pfkm (mouse) mapping to 15 F1.

**SOURCE**

PFK-1 (E-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 681-715 near the C-terminus of PFK-1 of human origin.

**PRODUCT**

Each vial contains 200 µg IgG kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.2% stabilizer protein.

Blocking peptide available for competition studies, sc-377346 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

**APPLICATIONS**

PFK-1 (E-4) is recommended for detection of muscle type PFK-1 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), 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).

PFK-1 (E-4) is also recommended for detection of muscle type PFK-1 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for PFK-1 siRNA (h): sc-44561, PFK-1 siRNA (m): sc-44562, PFK-1 shRNA Plasmid (h): sc-44561-SH, PFK-1 shRNA Plasmid (m): sc-44562-SH, PFK-1 shRNA (h) Lentiviral Particles: sc-44561-V and PLK-1 shRNA (m) Lentiviral Particles: sc-44562-V.

Molecular Weight of PFK-1: 85 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810 or human skeletal muscle extract: sc-363776.

**STORAGE**

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

**DATA**

![Western blot analysis of PFK-1 expression in human skeletal muscle (A) and rat skeletal muscle (B) tissue extracts. Detection reagent used: mlgGκ (1:1000) sc-377346](image1.png)

![Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse skeletal muscle tissue (A) and human heart muscle tissue (B) showing cytoplasmic staining of myocytes.](image2.png)

**SELECT PRODUCT CITATIONS**


**RESEARCH USE**

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