

## FN3KRP (Y-14): sc-164430

### BACKGROUND

Amines, including those present on proteins, spontaneously react with glucose to make fructosamines in a reaction termed glycation. Fructosamine 3-kinase (FN3K), a 309 amino acid enzyme initially identified in erythrocytes, catalyzes the ATP-dependent phosphorylation of the third carbon on both D- and L-fructosamines, leading to their destabilization and eventually, their removal from the protein. FN3K is a monomer that is ubiquitously expressed in mammalian tissue and phosphorylates both low molecular mass and protein-bound fructosamines which are formed as a result of glycation of glucose with primary amines. FN3K protects proteins from the harmful effects of nonenzymatic glycation, and may also be involved in peptide repair and cell metabolism. FN3KRP (fructosamine-3-kinase-related protein) is a 309 amino acid protein that is expressed in erythrocytes, bone marrow, spleen, brain and kidney and belongs to the fructosamine kinase family. FN3KRP functions to phosphorylate psicosamines and ribulosamines on the third carbon of their sugar moiety, thereby leading to the deglycation of the target amines.

### REFERENCES

1. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611683. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Collard, F., et al. 2003. A mammalian protein homologous to fructosamine-3-kinase is a ketosamine-3-kinase acting on psicosamines and ribulosamines but not on fructosamines. *Diabetes* 52: 2888-2895.
3. Conner, J.R., et al. 2004. The expression of the genes for fructosamine-3-kinase and fructosamine-3-kinase-related protein appears to be constitutive and unaffected by environmental signals. *Biochem. Biophys. Res. Commun.* 323: 932-936.
4. Collard, F., et al. 2004. Fructosamine 3-kinase-related protein and deglycation in human erythrocytes. *Biochem. J.* 382: 137-143.
5. Conner, J.R., et al. 2005. Some clues as to the regulation, expression, function, and distribution of fructosamine-3-kinase and fructosamine-3-kinase-related protein. *Ann. N.Y. Acad. Sci.* 1043: 824-836.
6. Szwergold, B., et al. 2007. Fructosamine-3-kinase-related-protein phosphorylates glucitolamines on the C-4 hydroxyl: novel substrate specificity of an enigmatic enzyme. *Biochem. Biophys. Res. Commun.* 361: 870-875.
7. Szwergold, B.S. 2007. Fructosamine-6-phosphates are deglycated by phosphorylation to fructosamine-3,6-bisphosphates catalyzed by fructosamine-3-kinase (FN3K) and/or fructosamine-3-kinase-related-protein (FN3KRP). *Med. Hypotheses* 68: 37-45.
8. Payne, L.S., et al. 2008. Mapping of the ATP binding domain of human fructosamine-3-kinase related protein by affinity labelling with 5'-[p-(fluorosulphonyl)benzoyl]adenosine. *Biochem. J.* 416: 281-288.

### CHROMOSOMAL LOCATION

Genetic locus: FN3KRP (human) mapping to 17q25.3; Fn3krp (mouse) mapping to 11 E2.

### SOURCE

FN3KRP (Y-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of FN3KRP 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-164430 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

FN3KRP (Y-14) is recommended for detection of FN3KRP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

FN3KRP (Y-14) is also recommended for detection of FN3KRP in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for FN3KRP siRNA (h): sc-93888, FN3KRP siRNA (m): sc-145210, FN3KRP shRNA Plasmid (h): sc-93888-SH, FN3KRP shRNA Plasmid (m): sc-145210-SH, FN3KRP shRNA (h) Lentiviral Particles: sc-93888-V and FN3KRP shRNA (m) Lentiviral Particles: sc-145210-V.

Molecular Weight of FN3KRP: 34 kDa.

Positive Controls: mouse thymus extract: sc-2406.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

### 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](http://www.scbt.com) or our catalog for detailed protocols and support products.