

## FOXO3 Protein, Human (HEK293, His)

<b>Cat. No.:</b>	HY-P701170
<b>Synonyms:</b>	AF6q21; FKHRL1; FKHRL1P2; FOXO2; FOXO3A
<b>Species:</b>	Human
<b>Source:</b>	HEK293
<b>Accession:</b>	O43524 (M1-G673)
<b>Gene ID:</b>	2309
<b>Molecular Weight:</b>	Approximately 110 kDa

### PROPERTIES

#### AA Sequence

MAEAPASPAP	LSPLEVELDP	EFEPQSRPRS	CTWPLQRPEL
QASPAKPSGE	TAADSMIPEE	EDDEDEDG	GRAGSAMAIG
GGGGSGTLGS	GLLLEDSARV	LAPGGQDPGS	GPATAAGGLS
GGTQALLQPQ	QPLPPPQPGA	AGGSGQPRKC	SSRRNAWGNL
SYADLITRAI	ESSPDKRLTL	SQIYEWVRC	VPYFKDKGDS
NSSAGWKNSI	RHNLSLHSRF	MRVQNEG TGK	SSWWIINPDG
GKSGKAPRRR	AVSMDNSNKY	TKSRGRAAKK	KAALQTAPES
ADDSPSQLSK	WPGSPTSRSS	DELDAWTD FR	SRTNSNASTV
SGRLSPIMAS	TELDEVQDDD	APLSPMLYSS	SASLSPSVSK
PCTVELPRLT	DMAGTMNLND	GLTENLMDDL	LDNITLPPSQ
PSPTGGLMQR	SSSFYTTKG	SGLGSPTSSF	NSTVFGPSSL
NSLRQSPMQT	IQENKPATFS	SMSHYGNQTL	QDLLTSDSLS
HSDVMMTQSD	PLMSQASTAV	SAQNSRRNVM	LRNDPMMSFA
AQPNQGS LVN	QNLLHHQHQT	QGALGGSRAL	SNSVSNMGLS
ESSSLGSAKH	QQQSPVVSQSM	QTLSDSLSGS	SLYSTSANLP
VMGHEKFPSD	LDLDMFNGSL	ECDMESIIRS	ELMDADGLDF
NFDSL ISTQN	VVGLNVGNFT	GAKQASSQSW	VPG

**Appearance** Lyophilized powder

**Formulation** Lyophilized from sterile PBS, pH 7.4.

**Endotoxin Level** <1 EU/μg, determined by LAL method.

**Reconstitution** It is not recommended to reconstitute to a concentration less than 100 μg/mL in PBS. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).

**Storage & Stability** Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.

**Shipping** Room temperature in continental US; may vary elsewhere.

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## DESCRIPTION

### Background

FOXO3, a transcriptional activator, plays a multifaceted role in cellular processes, including apoptosis and autophagy. It acts as a positive regulator of autophagy in skeletal muscle, activating the expression of autophagy genes under starved conditions. FOXO3 triggers apoptosis in the absence of survival factors, especially during oxidative stress. Additionally, it participates in the post-transcriptional regulation of MYC by inducing the expression of miR-34b and miR-34c, which prevent MYC translation. In response to metabolic stress, FOXO3 translocates into the mitochondria, promoting mtDNA transcription. Furthermore, it regulates chondrogenic commitment of skeletal progenitor cells by promoting SOX9 expression when lipids are scarce. FOXO3 is also a key regulator of regulatory T-cells (Treg) differentiation, activating the expression of FOXP3. In various contexts, FOXO3 forms complexes with SIRT3 and mitochondrial RNA polymerase POLRMT, contributing to its diverse functions. Interactions with proteins such as YWHAB/14-3-3-beta, STK4/MST1, and PIM1, among others, further modulate FOXO3 activity, highlighting its intricate regulatory network.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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