

## Product datasheet

# Human FOXO1A ELISA Kit ab215087

Recombinant SimpleStep ELISA®

[1 References](#) [5 Images](#)

### Overview

**Product name** Human FOXO1A ELISA Kit

**Detection method** Colorimetric

**Precision**

Intra-assay

Sample	n	Mean	SD	CV%
Overall	5			2.7%

Inter-assay

Sample	n	Mean	SD	CV%
Overall	3			5.5%

**Sample type** Cell culture extracts, Tissue Extracts

**Assay type** Sandwich (quantitative)

**Sensitivity** 40 pg/ml

**Range** 0.23 ng/ml - 15 ng/ml

**Recovery**

Sample specific recovery

Sample type	Average %	Range
Cell culture extracts	107	102% - 113%

**Assay time** 1h 30m

**Assay duration** One step assay

**Species reactivity** **Reacts with:** Human

**Product overview**

Human FOXO1A ELISA Kit (ab215087) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of FOXO1A protein in cell culture extracts and tissue extracts. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human FOXO1A with 40 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is

recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate ([ab203359](#)) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

## Notes

FOXO1A (also known as Forkhead box protein O1 and forkhead in rhabdomyosarcoma) is an intracellular transcription factor. FOXO1A has widespread expression and functions in metabolic homeostasis and insulin signaling. Human FOXO1A has 92% protein sequence identity to mouse and rat FOXO1A.

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## Platform

Pre-coated microplate (12 x 8 well strips)

## Properties

**Storage instructions** Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Human FOXO1A Capture Antibody	1 x 600µl
10X Human FOXO1A Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml
Antibody Diluent CPI2	1 x 6ml
Human FOXO1A Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 12ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit

Components	1 x 96 tests
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

**Function**

Transcription factor which acts as a regulator of cell responses to oxidative stress. In the presence of KIRT1, mediates down-regulation of cyclin D1 and up-regulation of CDKN1B levels which are required for cell transition from proliferative growth to quiescence.

**Tissue specificity**

Ubiquitous.

**Involvement in disease**

Defects in FOXO1 are a cause of rhabdomyosarcoma type 2 (RMS2) [MIM:268220]. It is a form of rhabdomyosarcoma, a highly malignant tumor of striated muscle derived from primitive mesenchymal cells and exhibiting differentiation along rhabdomyoblastic lines.

Rhabdomyosarcoma is one of the most frequently occurring soft tissue sarcomas and the most common in children. It occurs in four forms: alveolar, pleomorphic, embryonal and botryoidal rhabdomyosarcomas. Note=Chromosomal aberrations involving FOXO1 are found in rhabdomyosarcoma. Translocation (2;13)(q35;q14) with PAX3; translocation t(1;13)(p36;q14) with PAX7. The resulting protein is a transcriptional activator.

**Sequence similarities**

Contains 1 fork-head DNA-binding domain.

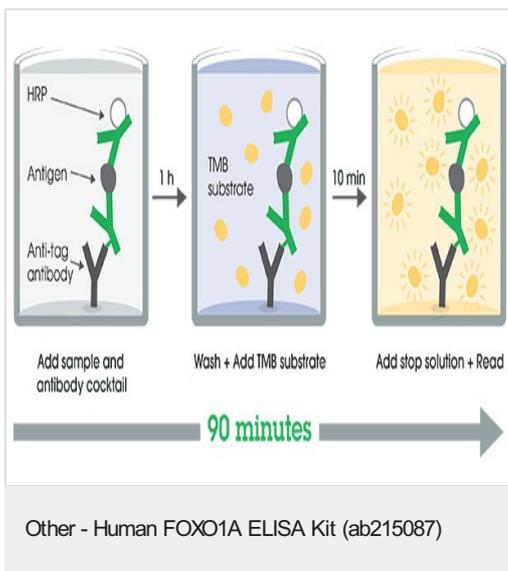
**Post-translational modifications**

Phosphorylated by AKT1; insulin-induced (By similarity). IGF1 rapidly induces phosphorylation of Ser-256, Thr-24, and Ser-319. Phosphorylation of Ser-256 decreases DNA-binding activity and promotes the phosphorylation of Thr-24, and Ser-319, permitting phosphorylation of Ser-322 and Ser-325, probably by CK1, leading to nuclear exclusion and loss of function. Phosphorylation of Ser-329 is independent of IGF1 and leads to reduced function. Phosphorylated upon DNA damage, probably by ATM or ATR.

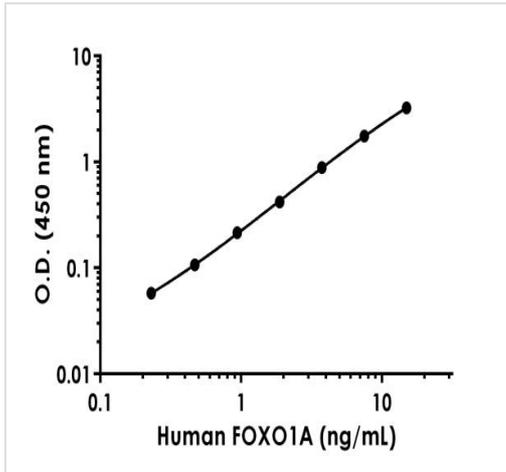
**Cellular localization**

Cytoplasm. Nucleus. Shuttles between cytoplasm and nucleus.

**Images**

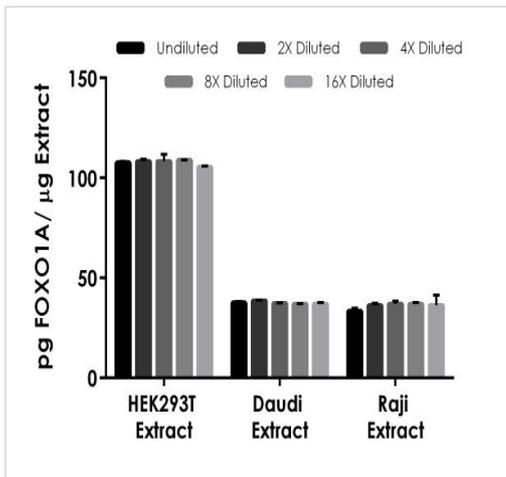


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



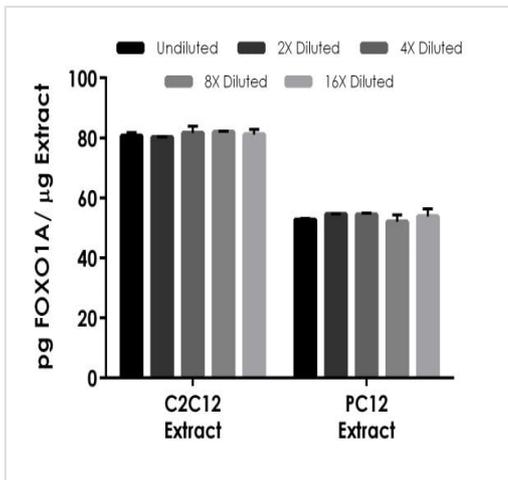
Example of human FOXO1A standard curve.

Background-subtracted data values (mean +/- SD) are graphed.



Interpolated concentrations of native FOXO1A in human HEK293T, Daudi and Raji cell extract samples.

The concentrations of FOXO1A were measured in duplicate and interpolated from the FOXO1A standard curve and corrected for sample dilution and extract load. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean FOXO1A concentration was determined to be 107.7 pg/μg HEK293T extract, 37.5 pg/μg Daudi extract, and 35.9 pg/μg Raji extract.



Interpolated concentrations of native FOXO1A in mouse C2C12 extract, and rat PC12 extract.

The concentrations of FOXO1A were measured in duplicate and interpolated from the human FOXO1A standard curve and corrected for sample dilution and extract load. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean FOXO1A concentration was determined to be 81.1 pg/μg C2C12 extract and 53.5 pg/μg PC12 extract.

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**Research with confidence**  
Consistent and reproducible results

**Long-term and scalable supply**  
Recombinant technology

**Success from the first experiment**  
Confirmed specificity

**Ethical standards compliant**  
Animal-free production

Sandwich ELISA - Human FOXO1A ELISA Kit (ab215087)

To learn more about the advantages of recombinant antibodies see [here](#).

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