abcam

Product datasheet

Human Beta-III Tubulin ELISA Kit ab235644

Recombinant SimpleStep ELISA

5 Images

Overview

Product name Human Beta-III Tubulin ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Cell Extract	5			2.9%

Inter-assay

Sample	n	Mean	SD	CV%
Cell Extract	3			10.3%

Sample type Cell culture extracts, Tissue Extracts

Assay type Sandwich (quantitative)

Sensitivity 139 pg/ml

Range 313 pg/ml - 20000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture extracts	104	97% - 112%
Tissue Extracts	102	97% - 108%

Assay time 1h 30m

Assay duration One step assay

Species reactivity **Reacts with:** Human

Product overview Human Beta-III Tubulin ELISA Kit (ab235644) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Beta-III Tubulin protein in cell culture extracts and tissue extracts. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Beta-III Tubulin with 139 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

Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.
It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

Store at +4°C. Please refer to protocols.

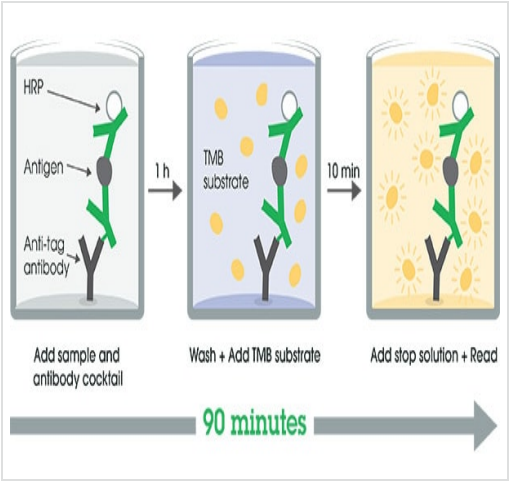
Components	1 x 96 tests
10X Human Beta III-Tubulin Capture Antibody	1 x 600µl
10X Human Beta III-Tubulin Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml
Antibody Diluent 4BI	1 x 6ml
Human Beta III-Tubulin Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

Function

Tubulin is the major constituent of microtubules. It binds two moles of GTP, one at an

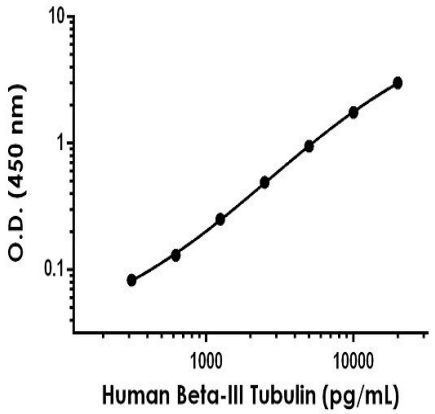
	exchangeable site on the beta chain and one at a non-exchangeable site on the alpha-chain. TUBB3 plays a critical role in proper axon guidance and mantainance.
Tissue specificity	Expression is primarily restricted to central and peripheral nervous system.
Involvement in disease	Defects in TUBB3 are the cause of congenital fibrosis of extraocular muscles type 3A (CFEOM3A) [MIM:600638]. A congenital ocular motility disorder marked by restrictive ophthalmoplegia affecting extraocular muscles innervated by the oculomotor and/or trochlear nerves. It is clinically characterized by anchoring of the eyes in downward gaze, ptosis, and backward tilt of the head. Congenital fibrosis of extraocular muscles type 3 presents as a non-progressive, autosomal dominant disorder with variable expression. Patients may be bilaterally or unilaterally affected, and their oculo-motility defects range from complete ophthalmoplegia (with the eyes fixed in a hypo- and exotropic position), to mild asymptomatic restrictions of ocular movement. Ptosis, refractive error, amblyopia, and compensatory head positions are associated with the more severe forms of the disorder. In some cases the ocular phenotype is accompanied by additional features including developmental delay, corpus callosum agenesis, basal ganglia dysmorphism, facial weakness, polyneuropathy.
Sequence similarities	Belongs to the tubulin family.
Domain	The highly acidic C-terminal region may bind cations such as calcium.
Post-translational modifications	Some glutamate residues at the C-terminus are polyglutamylated. This modification occurs exclusively on glutamate residues and results in polyglutamate chains on the gamma-carboxyl group. Also monoglycylated but not polyglycylated due to the absence of functional TTLL10 in human. Monoglycylation is mainly limited to tubulin incorporated into axonemes (cilia and flagella) whereas glutamylation is prevalent in neuronal cells, centrioles, axonemes, and the mitotic spindle. Both modifications can coexist on the same protein on adjacent residues, and lowering glycylation levels increases polyglutamylation, and reciprocally. The precise function of such modifications is still unclear but they regulate the assembly and dynamics of axonemal microtubules.
Cellular localization	Cytoplasm > cytoskeleton.

Images



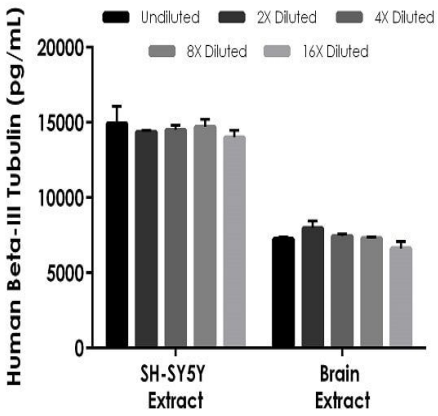
Other - Human Beta-III Tubulin ELISA Kit (ab235644)

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.



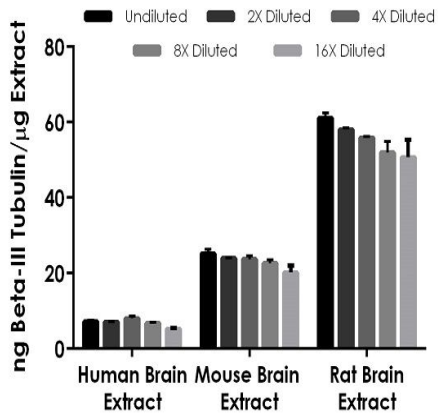
Example of Human Beta-III Tubulin standard curve in 1X Cell Extraction Buffer PTR.

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



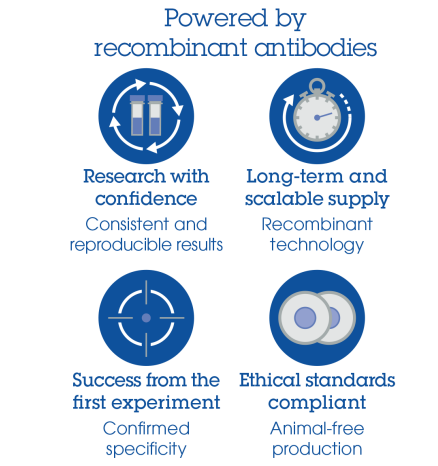
Interpolated concentrations of native Beta-III Tubulin in Human SH-SY5Y cell extract and human brain tissue extract, based on a 1 µg/mL extract load.

The concentrations of Beta-III Tubulin were measured in duplicate and interpolated from the Beta-III Tubulin standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Beta-III Tubulin concentration was determined to be 14,511 pg/mL in SH-SY5Y cell extract and 7,318 pg/mL in brain tissue extract.



Interpolated concentrations of native Beta-III Tubulin in human, mouse and rat brain extract.

The concentrations of Beta-III Tubulin were measured in duplicate and interpolated from the Beta-III Tubulin standard curve and corrected for sample dilution and extract load. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Beta-III Tubulin concentration was determined to be 7.3 ng/µg human brain tissue extract, 23.1 ng/µg mouse brain tissue extract, and 55.5 ng/µg rat brain tissue extract.



Sandwich ELISA - Human Beta-III Tubulin ELISA Kit (ab235644)

To learn more about the advantages of recombinant antibodies see **here**.

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