abcam

Product datasheet

Human EpCAM ELISA Kit ab264632

Recombinant SimpleStep ELISA®

1 References 5 Images

Overview

Product name Human EpCAM ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Supernatant	8			6.1%

Inter-assay

Sample	n	Mean	SD	CV%
Supernatant	2			1.8%

Sample type Cell culture supernatant, Urine, Cell Lysate, Cell culture media

Assay type Sandwich (quantitative)

Sensitivity 30 pg/ml

Range 78.11 pg/ml - 5000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	116	101% - 126%
Urine	109	101% - 120%
Cell Lysate	106	96% - 117%
Cell culture media	117	113% - 125%

Assay time 1h 30m

Assay duration One step assay

Species reactivity **Reacts with:** Human

Product overview

Human EpCAM ELISA Kit (ab264632) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of EpCAM protein in cell culture supernatant, cell lysate, urine, and cell culture media. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human EpCAM with 30 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

Epithelial cell adhesion molecule (EpCAM) is a single-pass type I plasma membrane glycoprotein that may act as a physical homophilic interaction molecule between intestinal epithelial cells and intraepithelial lymphocytes at the mucosal epithelium for providing immunological barrier as a first line of defense against mucosal infection. EpCAM plays a role in embryonic stem cells proliferation and differentiation.

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

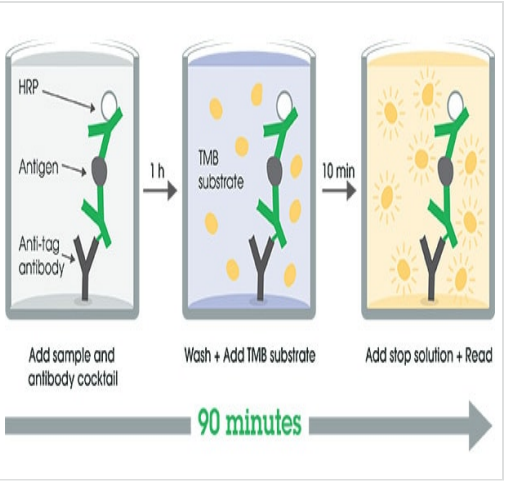
Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Human EpCAM Capture Antibody	1 x 600µl
10X Human EpCAM 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 4BI	1 x 6ml

Components	1 x 96 tests
Human EpCAM 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

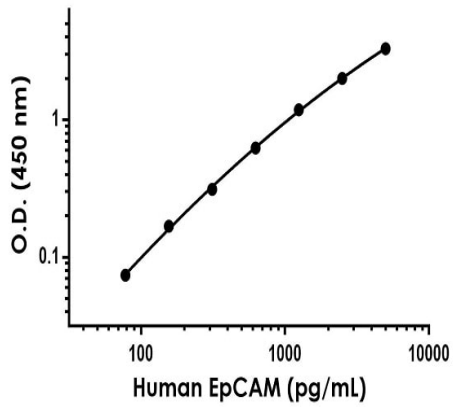
Function	May act as a physical homophilic interaction molecule between intestinal epithelial cells (IECs) and intraepithelial lymphocytes (IELs) at the mucosal epithelium for providing immunological barrier as a first line of defense against mucosal infection. Plays a role in embryonic stem cells proliferation and differentiation. Up-regulates the expression of FABP5, MYC and cyclins A and E.
Tissue specificity	Highly and selectively expressed by undifferentiated rather than differentiated embryonic stem cells (ESC). Levels rapidly diminish as soon as ESC's differentiate (at protein levels). Expressed in almost all epithelial cell membranes but not on mesodermal or neural cell membranes. Found on the surface of adenocarcinoma.
Involvement in disease	Defects in EPCAM are the cause of diarrhea type 5 (DIAR5) [MIM:613217]. It is an intractable diarrhea of infancy characterized by villous atrophy and absence of inflammation, with intestinal epithelial cell dysplasia manifesting as focal epithelial tufts in the duodenum and jejunum. Defects in EPCAM are a cause of hereditary non-polyposis colorectal cancer type 8 (HNPCC8) [MIM:613244]. HNPCC is a disease associated with marked increase in cancer susceptibility. It is characterized by a familial predisposition to early-onset colorectal carcinoma (CRC) and extra-colonic tumors of the gastrointestinal, urological and female reproductive tracts. HNPCC is reported to be the most common form of inherited colorectal cancer in the Western world. Clinically, HNPCC is often divided into two subgroups. Type I is characterized by hereditary predisposition to colorectal cancer, a young age of onset, and carcinoma observed in the proximal colon. Type II is characterized by increased risk for cancers in certain tissues such as the uterus, ovary, breast, stomach, small intestine, skin, and larynx in addition to the colon. Diagnosis of classical HNPCC is based on the Amsterdam criteria: 3 or more relatives affected by colorectal cancer, one a first degree relative of the other two; 2 or more generation affected; 1 or more colorectal cancers presenting before 50 years of age; exclusion of hereditary polyposis syndromes. The term 'suspected HNPCC' or 'incomplete HNPCC' can be used to describe families who do not or only partially fulfill the Amsterdam criteria, but in whom a genetic basis for colon cancer is strongly suspected. Note=HNPCC8 results from heterozygous deletion of 3-prime exons of EPCAM and intergenic regions directly upstream of MSH2, resulting in transcriptional read-through and epigenetic silencing of MSH2 in tissues expressing EPCAM.
Sequence similarities	Belongs to the EPCAM family. Contains 1 thyroglobulin type-1 domain.
Post-translational modifications	Hyperglycosylated in carcinoma tissue as compared with autologous normal epithelia. Glycosylation at Asn-198 is crucial for protein stability.
Cellular localization	Lateral cell membrane. Cell junction > tight junction. Co-localizes with CLDN7 at the lateral cell membrane and tight junction.

Images



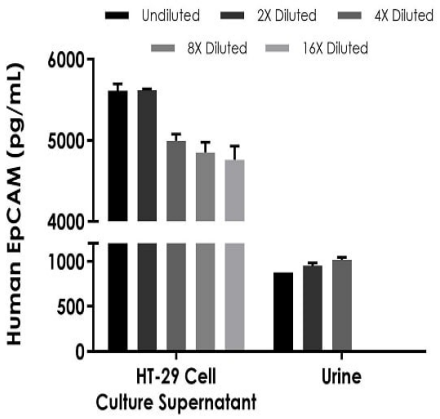
SimpleStep ELISA Protocol Diagram

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.



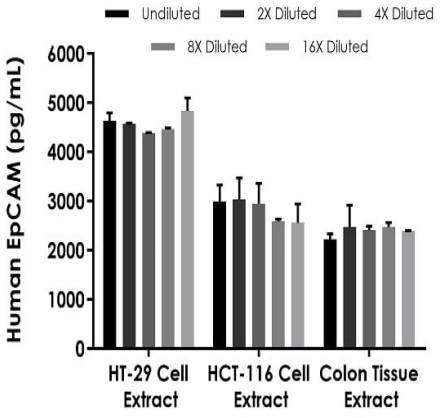
Example of human EpCAM standard curve in Sample Diluent NSE.

The EpCAM standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



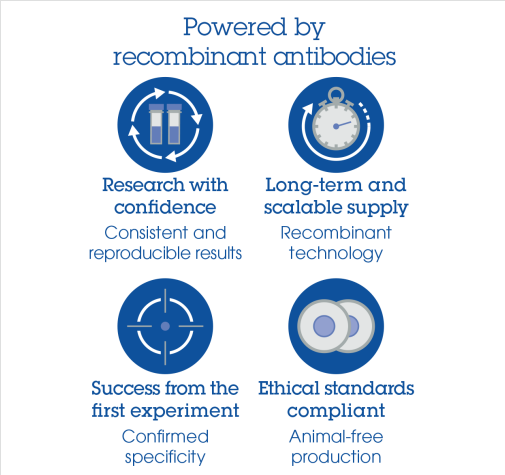
Interpolated concentrations of native EpCAM in human HT-29 cell culture supernatant and urine samples.

The concentrations of EpCAM were measured in duplicates, interpolated from the EpCAM standard curves and corrected for sample dilution. Undiluted samples are as follows: HT-29 cell culture supernatant 75%, urine 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean EpCAM concentration was determined to be 5,467 pg/mL in neat HT-29 cell culture supernatant and 947 pg/mL in neat urine.



Interpolated concentrations of native EpCAM in human HT-29 cell based on a 25 µg/mL extract load, human HCT-116 cell based on a 4 µg/mL extract load and colon tissue based on a 400 µg/mL extract load

The concentrations of EpCAM were measured in duplicate and interpolated from the EpCAM standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean EpCAM concentration was determined to be 4,578 pg/mL in HT-29 cell extract, 2,825 pg/mL in HCT-116 cell extract and 2,391 pg/mL in colon extract.



Sandwich ELISA - Human EpCAM ELISA Kit (ab264632)

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

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