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Antibodies | ELISA kits | Proteins

Rat FABP1 sandwich ELISA kit datasheet

For the quantitative detection of rat FABP1 in serum and plasma.

general information

Catalogue Number	KE20011
Product Name	Rat FABP1 ELISA Kit
Species cross-reactivity	Rat FABP1
Range (calibration Range)	78.1 - 5000 pg/mL
Tested applications	Quantification ELISA

database links

Entrez Gene	**24360** (Rat)
SwissProt	**P02692** (Rat)

kit components & storage

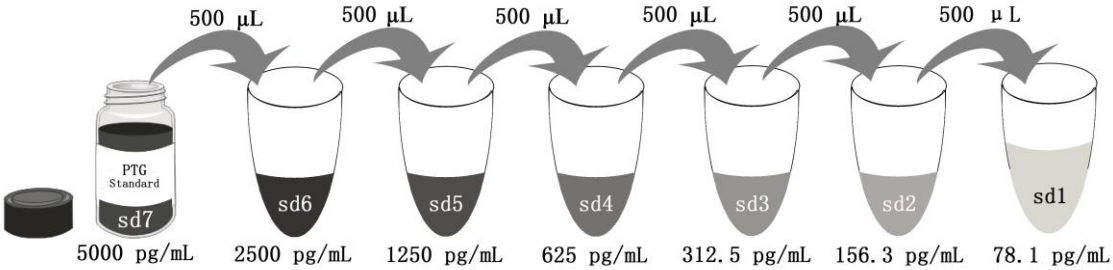
Microplate - antibody coated 96 - well Microplate (8 well × 12 strips)	1 plate	Store at 2-8°C for six months
Standard - 5000 pg/bottle; lyophilized*	2 bottles	Store at 2-8°C for six months
Detection antibody (100X), biotinylated - 120 µL/vial	1 vial	Store at 2-8°C for six months
Streptavidin-HRP (100X) - 120 µL/vial	1 vial	Store at 2-8°C for six months
Sample Diluent PT 1 - 30 mL/bottle	1 bottle	Store at 2-8°C for six months
Detection Diluent - 30 mL/bottle	1 bottle	Store at 2-8°C for six months
Wash Buffer Concentrate (20X) - 30 mL/bottle	1 bottle	Store at 2-8°C for six months
Tetramethylbenzidine Substrate (TMB) - 12 mL/bottle	1 bottle	Store at 2-8°C for six months
Stop Solution - 12 mL/bottle	1 bottle	Store at 2-8°C for six months
Plate Cover Seals	3 pieces	

NB: Do not use the kit after the expiration date.

Sample Diluent PT 1 is for standard and samples

Detection Diluent is for Detection antibody.

*Add **1 mL** Sample Diluent PT 1 in Standard. This reconstitution gives a stock solution of 5000 pg/mL.



Add # µL of Standard diluted in the previous step	—	500 µL	500 µL	500 µL	500 µL	500 µL	500 µL
# µL of Sample Diluent PT 1	**1000 µL**	500 µL	500 µL	500 µL	500 µL	500 µL	500 µL
	"sd7"	"sd6"	"sd5"	"sd4"	"sd3"	"sd2"	"sd1"

product description

KE20011 is a solid phase sandwich Enzyme Linked-Immuno-Sorbent Assay (Sandwich ELISA). The FABP1 ELISA kit is to be used to detect and quantify protein levels of endogenous FABP1. The assay recognizes rat FABP1. An antibody specific for FABP1 has been pre-coated onto the microwells. The FABP1 protein in samples is captured by the coated antibody after incubation. Following extensive washing, another antibody of biotinylated specific for rat FABP1 is added to detect the captured rat FABP1 protein. For signal development, Streptavidin-HRP is added, followed by Tetramethyl-benzidine (TMB) reagent. Solution containing sulfuric acid is used to stop color development and the color intensity which is proportional to the quantity of bound protein is measurable at 450 nm with the correction wavelength set at 630 nm.

background

Fatty acid - binding protein 1 (FABP1, also known as L - FABP) is a 14 KDa cytosolic protein abundantly expressed in the liver. It can bind fatty acids and many other molecules and is involved in the uptake, transport, and metabolism of cellular long-chain fatty acids and other lipid ligands. Higher FABP1 serum level has been associated with liver injury. Levels of FABP1 can be helpful as a biomarker for metabolic disturbances and impaired function of hepatocytes.

sample preparation

The serum or plasma may require proper dilution to fall within the range of the assay. 1:5 or 1:10 dilution is recommended for serum or plasma.

safety notes

This product is sold for lab research and development use ONLY and not for use in Rats or animals.
Avoid any skin and eye contact with Stop Solution and TMB. In case of contact, wash thoroughly with water.

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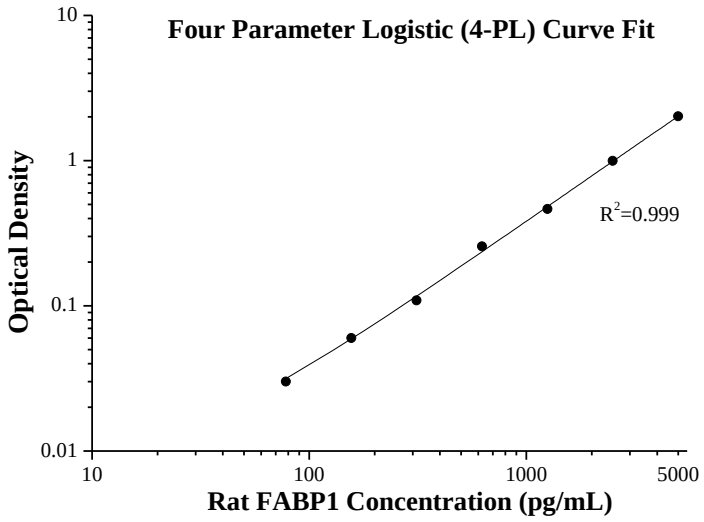
assay procedure summary

Step	Reagent	Volume	Incubation	Wash	Notes
1	Standard and Samples	100 µL	**120 min**	4 times	Cover Wells incubate at 37°C
2	Diluent Antibody Solution	100 µL	60 min	4 times	Cover Wells incubate at 37°C
3	Diluent HRP Solution	100 µL	40 min	4 times	Cover Wells incubate at 37°C
4	TMB Substrate	100 µL	15-20 min	Do not wash	Incubate in the dark at 37°C
5	Stop Solution	100 µL	0 min	Do not wash	-
6	Read plate at 450 nm and 630 nm immediately after adding Stop solution. DO NOT exceed 5 minutes.				

typical data

These standard curves are provided for demonstration only. A standard curve should be generated for each set of samples assayed.



(pg/mL)	O.D	Average	Corrected
0	0.102	0.100	—
	0.098		
78.1	0.132	0.130	0.030
	0.128		
156.3	0.164	0.160	0.060
	0.156		
312.5	0.197	0.209	0.109
	0.220		
625	0.382	0.357	0.257
	0.332		
1250	0.559	0.565	0.465
	0.570		
2500	1.061	1.095	0.995
	1.129		
5000	2.138	2.119	2.019
	2.100		

precision

Intra-assay Precision (Precision within an assay) Three samples of known concentration were tested 20 times on one plate to assess intra-assay precision.

Inter-assay Precision (Precision between assays) Three samples of known concentration were tested in 24 separate assays to assess inter-assay precision.

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	Intra-assay Precision			Inter-assay Precision		
Sample	1	2	3	1	2	3
n	20	20	20	24	24	24
Mean (ng/mL)	2,511.5	633.0	324.5	2,362.5	599.4	309.9
SD	55.7	18.4	17.5	66.1	16.9	11.8
CV%	2.2	2.9	5.4	2.8	2.8	3.8

recovery

The recovery of FABP1 spiked to three different levels in four samples throughout the range of the assay in various matrices was evaluated.

Sample Type		Average % of Expected	Range (%)
Rat serum	1:4	110	94-124
	1:8	99	76-121

sample values

Sample Type	Mean**(ng/mL)**	Rang **(ng/mL)**
Rat serum (n=16)	8.8	2.9-25.9

sensitivity

The minimum detectable dose of Rat FABP1 is 8.1 pg/mL. This was determined by adding two standard deviations to the concentration corresponding to the mean O.D. of 20 zero standard replicates.

linearity

To assess the linearity of the assay, samples were diluted with the appropriate Sample Diluent to produce samples with values within the dynamic range of the assay. (The serum samples were initially diluted 1:2)

		Rat serum
1:2	Average% of Expected	100
	Range (%)	-
1:4	Average% of Expected	114
	Range (%)	109-123
1:8	Average% of Expected	97
	Range (%)	82-110
1:16	Average% of Expected	81
	Range (%)	80-82

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references

1. Bogdan M. et al. (2015). Curr Health Sci J. 2015 Apr-Jun;41(2):115-120. (PMID: 30364790)
2. Bogdan M. et al. (2015). Int J Clin Exp Med. 2015 May 15;8(5):8051-9. (PMID: 26221370)

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