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Accelerates Research and Development

Mouse Vascular Endothelial Growth Factor,

VEGF ELISA Kit

Catalog number: NR-E10674 (96 wells)

The kit is designed to quantitatively detect the levels of Mouse VEGF
in cell culture supernatants, serum, plasma and other suitable sample solution.

FOR **RESEARCH USE ONLY**. NOT FOR DIAGNOSTIC OR THERAPEUTIC PURPOSES

Important notes

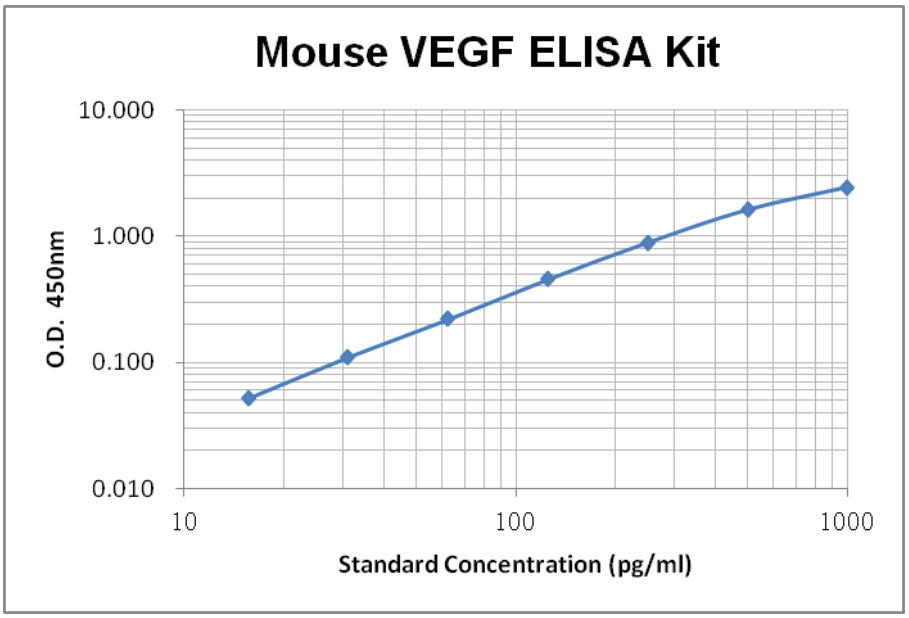
Before using this product, please read this manual carefully; after reading the subsequent contents of this manual, please note the following specially:

- The operation should be carried out in strict accordance with the provided instructions.
- Store the unused strips in a sealed foil bag at 2-8°C.
- Always avoid foaming when mixing or reconstituting protein solutions.
- Pipette reagents and samples into the center of each well, avoid bubbles.
- The samples should be transferred into the assay wells within 15 minutes of dilution.
- We recommend that all standards, testing samples are tested in duplicate.
- Using serial diluted sample is recommended for first test to get the best dilution factor.
- If the blue color develops too light after 15 minutes incubation with the substrate, it may be appropriate to extend the incubation time (Do not over-develop).
- Avoid cross-contamination by changing tips, using separate reservoirs for each reagent.
- Avoid using the suction head without extensive wash.
- Do not mix the reagents from different batches.
- Stop Solution should be added in the same order of the Substrate Solution.
- TMB developing agent is light-sensitive. Avoid prolonged exposure to the light.

Typical data:

This standard curve was generated at Novatein biolab for demonstration purpose only. A standard curve must be run with each assay.

Conc (pg/ml)	0	15.6	31.2	62.5	125	250	500	1000
O.D.(450nm)	0.001	0.052	0.110	0.219	0.453	0.888	1.615	2.431



Background:

Vascular endothelial growth factor (VEGF or VEGF-A), also known as vascular permeability factor (VPF), is a member of the PDGF family characterized by the presence of eight conserved cysteine residues in a cysteine knot structure and the formation of antiparallel disulfide-linked dimers. Six alternately spliced VEGF isoforms containing 121, 145, 165, 183, 189, and 206 amino acids (aa), respectively, have been identified in humans. VEGF165 appears to be the most abundant and potent isoform and shares 88% aa sequence identity with mouse and Rabbit VEGF within corresponding regions. VEGF isoforms are differentially expressed during development and in the adult.

VEGF dimers bind to two related receptor tyrosine kinases, VEGF R1 (Flt-1) and VEGF R2 (Flk-1/KDR) to activate a series of cellular processes. During embryogenesis, VEGF regulates the proliferation, migration, and survival of endothelial cells, and modulate blood vessel density and size. In adulthood, VEGF functions primarily in wound healing and the female reproductive cycle.

Assay procedures

Bring all reagents to room temperature before use. Mouse VEGF Standard curve should be prepared for each experiment. The user will decide sample dilution factor by rough estimation of Mouse VEGF concentration in samples.

1. Add 100 µl of sample or standards per well. Add 0.1ml of the sample diluent into the control well (Zero well). Cover with an adhesive strip and incubate 90 minutes at 37°C. Note: We recommend that each Mouse VEGF standard solution and each sample is measured in duplicate.
2. Aspirate each well and wash with Wash Buffer, repeating the process two times for a total of three washes. Wash by filling each well with Wash Buffer (300 µl) using a squirt bottle, manifold dispenser, or auto-washer. Complete removal of liquid at each step is essential for good performance. After the last wash, remove any remaining Wash Buffer by aspirating or by inverting the plate and blotting it against clean paper towels.
3. Add 100 µl of the Detection Antibody working solution to each well. Cover with a new adhesive strip and incubate 60minutes at 37°C.
4. Repeat the aspiration/wash as in step 2.
5. Add 100 µl of the working solution of Streptavidin-HRP to each well. Cover the plate and incubate for 30 minutes at 37°C.
6. Repeat the aspiration/wash as in step 2 for five times.
7. Mix chromogen A and chromogen B at equal volume. Add 90µl of TMB mixture to each well. Cover and incubate for 20-40 minutes at room temperature (Protect from light. Do not over-develop).
8. Add 90µl Stop Solution to each well. Mix well.
9. Read the Optical Density (O.D.) at 450 nm using a microtiter plate reader immediately.

Result calculation

For calculation, (the relative O.D.450) = (the O.D.450 of each well) – (the O.D.450 of Zero well). The standard curve can be plotted as the relative O.D.450 of each standard solution (Y) vs. the respective concentration of the standard solution (X). The Mouse VEGF concentration of the samples can be interpolated from the standard curve.

Note: if the samples measured were diluted, multiply the dilution factor to the concentrations from interpolation to obtain the concentration before dilution.

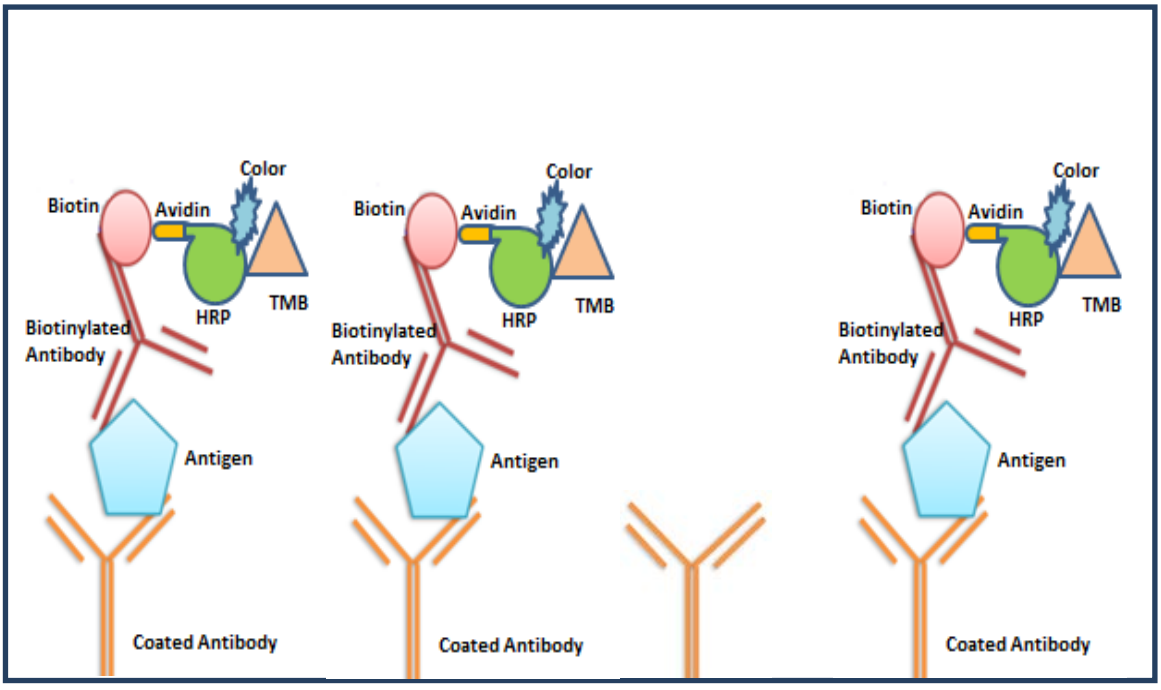
Intended use

The kit is used to quantify the Mouse VEGF in serum, plasma, body fluids, tissue lysate or cell culture supernatant.

Standard range	15.6 - 1000 pg/ml
Sensitivity	3.5 pg/ml
Assay time	4 hours
Validity	Six months
Store at	2-8 °C

Assay principle

This Mouse VEGF ELISA Kit is based on standard sandwich enzyme-linked immunosorbent assay technology. Mouse VEGF specific antibody has been precoated onto 96-well plate. The test samples and the biotinylated Mouse VEGF specific detection antibody are added to the wells subsequently and then followed by washing the plate. Streptavidin-HRP is added and unbound conjugates are washed away with Wash Buffer. HRP substrate TMB is used to visualize HRP enzymatic reaction. TMB is catalyzed by HRP to produce a blue color product that changes into yellow after adding acidic Stop Solution. The density of yellow is proportional to the Mouse VEGF amount of sample captured in plate.



Materials supplied

1.Mouse VEGF standard:	1000 pg/ml, 1ml x2
2. 96-well plate pre-coated with anti-Mouse VEGF Ab:	1.
3. Sample diluent buffer:	12 ml × 2.
4. Detection antibody:	180 µl, dilution 1:60.
5. Streptavidin-HRP:	300 µl, dilution 1:40.
6. Antibody diluent buffer:	12 ml.
7. Streptavidin-HRP diluent buffer:	12 ml.
8. Chromogen A and Chromogen B:	6 ml each.
9. Stop Solution:	6 ml.
10. 20 × Wash Buffer:	25 ml.
11. Plate sealer	1.
12. Package insert	1.

Materials required but not supplied

- 37°C incubator.
- Standard plate reader capable of measuring absorbance at 450 nm.
- Adjustable pipettes and disposable pipette tips.
- Multi-channel pipettes, manifold dispenser or automated microplate washer.
- Distilled water.
- Absorbent paper.
- Materials used for sample preparation.

Sample Preparation and storage

Store samples to be assayed within 24 hours at 2-8°C. For long-term storage, aliquot and freeze samples at -20°C. Avoid repeated freeze-thaw cycles.

- Cell culture supernatant, tissue lysate or body fluids: Remove particulates by centrifugation, analyze immediately or aliquot and store at -20°C
- Serum: Allow the serum to clot in a serum separator tube (about 4hours) at room temperature. Centrifuge at approximately 1000 X g for 15 min. Analyze the serum immediately or aliquot and store frozen at -20°C.
- Plasma: Collect plasma using heparin as an anticoagulant. Centrifuge for 15 min at 1000 x g within 30 minutes of collection. Analyze immediately or aliquot and store frozen at -20°C. EDTA and citrate are not recommended as the anticoagulant.

Reagent Preparation

Standard

- Mouse VEGF: Standard solution should be prepared no more than 2 hours prior to the experiment. Two tubes of standard (10ng /vial) are included in each kit. Use one tube for each experiment.
- 1000pg/ml→15.6 pg/ml of Mouse VEGF standard solutions:
- Add 1 ml of sample diluents into one standard tube with 10 ng Mouse VEGF. Keep the tube at room temperature for 10 minutes and mix thoroughly. This is 10000 pg/ml standard solution.
- Label 7 Eppendorf tubes with 1000 pg/ml, 500 pg/ml, 250 pg/ml, 125 pg/ml, 62.5 pg/ml, 31.2 pg/ml, 15.6 pg/ml, respectively. Aliquot 0.9 ml of the sample diluents and add 0.1ml of 10000 pg/ml standard solution into 1000pg/ml tube. Then make 2-fold serial dilution from 1000 pg/ml to 15.6 pg/ml in seven 1.5 ml tubes.
- Make sure each tube has ⩾ 300 ul of standard.

Note: The standard solutions are best used within 2 hours.

Preparation of biotinylated anti-Mouse VEGF antibody working solution

- The solution should be prepared no more than 2 hours prior to the experiment.
- The total volume should be: 0.1ml/well x the number of wells (Allowing 0.1-0.2 ml more than total volume.
- Biotinylated anti-Mouse VEGF detection antibody should be diluted in 1:60 with Antibody diluent buffer and mixed thoroughly.

Preparation of Streptavidin-HRP working solution

- The solution should be prepared no more than 1 hour prior to the experiment.
- The total volume should be: 0.1ml/well x the number of wells (Allowing 0.1-0.2 ml more than total volume).
- Streptavidin-HRP should be diluted in 1:40 with Streptavidin-HRP diluent buffer and mixed thoroughly.

Wash Buffer

- If crystals have formed in the 20 × wash buffer, warm to room temperature and mix gently until the crystals have completely dissolved.
- Dilute 25 ml Wash Buffer Concentrate (20 ×) to a total volume of 500ml with distilled water.