

Bevacizumab

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| Cat. No.: | HY-P9906 |
| CAS No.: | 216974-75-3 |
| Target: | VEGFR |
| Pathway: | Protein Tyrosine Kinase/RTK |
| Storage: | Please store the product under the recommended conditions in the Certificate of Analysis. |

BIOLOGICAL ACTIVITY

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| Description | Bevacizumab, a humanized monoclonal antibody, specifically binds to all VEGF-A isoforms with high affinity. |
| IC₅₀ & Target | VEGF ^[1] |
| In Vitro | Bevacizumab, a humanized monoclonal antibody, specifically binds to all VEGF-A isoforms with high affinity, and inhibits its interaction with VEGFR-1 and VEGFR-2 ^[1] . Experimental analysis shows that the EC ₅₀ of Bevacizumab to bind VEGF analyzed by ELISA is 0.18 µg/mL. Binding kinetics assays show similar results that Bevacizumab inhibits the VEGF-induced proliferation of HUVEC with an IC ₅₀ value of 0.047±0.0081 µg/mL ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| In Vivo | It is demonstrated that the subconjunctival administration of FD006 and Bevacizumab can significantly inhibit CoNV in NaOH cauterized rats compared with the control group (p < 0.01) ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

PROTOCOL

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| Cell Assay ^[2] | Human umbilical vein endothelial cells (HUVECs) (1×10 ⁴ cells/100 µL/well) are seeded in 96-well plates and cultured at 37 for 14 h with Endothelial Cell Medium. After low-serum starvation overnight, cells are treated with different concentrations of FD006 or Bevacizumab which are pre-incubated with 10 ng/mL VEGF for 30 minutes and incubated at 37, 5% CO ₂ for 72 hours. Then, 10 µL CCK8 is added to each well and incubated for another 4 hours. The absorbance is measured by spectrophotometer at 450 nm to determine the cell viability ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| Animal Administration ^{[2][3]} | Rats ^[2] After modeling, ninety rats are randomly divided into five groups (eighteen rats per group) and receive a subconjunctival injection with 0.05 mL per rat of (1) 0.9% NaCl, (2) solvent, (3) 25 mg/mL Bevacizumab and (4) 25 mg/mL FD006 in the superior temporal conjunctiva on the day after modeling. All chemical burns and treatments are performed by one investigator. The operator is blinded to the treatment group from which each cornea is derived. At postoperative days 3, 7, 14, 21 and 28, the eyes are harvested for further studies after the rats are sacrificed. Mice ^[3] Five-week-old Balb/cAnNCrLBR athymic (nu+/nu+) mice are injected into the fourth mammary fat pad with MDA-MB-468 |

cells (10^7 cells per mice) resuspended in 200 μ L of Matrigel. Seven days after the tumor cell injection, tumor-bearing mice are randomly assigned (n=10 per group) to receive the following: NVP-LDE225 20 mg/kg per os every day for 4 weeks; Bevacizumab 5 mg/kg intravenously (i.v.), twice a week for 4 weeks. Tumor diameter is assessed with a vernier caliper, and tumor volume (cm^3) is measured.

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CUSTOMER VALIDATION

- J Extracell Vesicles. 2019 Jun 17;8(1):1629865.
- Anal Chim Acta. 2021, 338306.
- EBioMedicine. 2019 Sep.
- Nucleic Acid Ther. 2020 Dec;30(6):365-378.
- Sci Rep. 2019 Nov 18;9(1):16954.

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REFERENCES

- [1]. Tan H, et al. $^{99\text{mTc}}$ -labeled bevacizumab for detecting atherosclerotic plaque linked to plaque neovascularization and monitoring antiangiogenic effects of treatment in ApoE $^{-/-}$ mice. Sci Rep. 2017 Jun 14;7(1):3504.
- [2]. Wang Q, et al. Pharmacological characteristics and efficacy of a novel anti-angiogenic antibody FD006 in corneal neovascularization. BMC Biotechnol. 2014 Feb 27;14:17.
- [3]. Di Mauro C, et al. Hedgehog signalling pathway orchestrates angiogenesis in triple-negative breast cancers. Br J Cancer. 2017 May 23;116(11):1425-1435.

Caution: Product has not been fully validated for medical applications. For research use only.

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