Product Data Sheet

Product Name: Bevacizumab (Anti-Human VEGF, Humanized Antibody)
Cat. No.: GC34216

Chemical Properties

Cas. No.	216974-75-3		
SMILES	[Bevacizumab]		
Formula		M.Wt	146542.45
Solubility	Soluble in DMSO	Storage	Store at -80°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Protocol

Cell experiment [1]:

Cell lines	HHT cell cultures □HUVEC cell
Preparation Method	After 24, 48 or 72 h of incubation with 0, 2, 4, 6, 8 or 10 mg/ml Bevacizumab, the expression of VEGF was analyzed in the supernatants of the HHT cell cultures and the HUVECs.
Reaction Conditions	0, 2, 4, 6, 8 or 10 mg/ml; 24, 48 or 72 h

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Applications	VEGF expression decreased after 24h in cell cultures incubated with bevacizumab concentration levels of 2 and 4 mg/ml but increased again after 48h.

Animal experiment [2]:

Animal models	NMRI nu/nu nude mice
Preparation Method	Bevacizumab was used to inhibit tumor cell-derived human VEGF-A and was administered i.p. at doses of 25, 5, and 0.5mg/kg bodyweight every second day for 12 days. A control group with size-matched tumors received human polyclonal immunoglobulin G at a dose of 25 mg/kg.
Dosage form	25, 5, and 0.5mg/kg; every second day for 12 days; i.p.
Applications	Bevacizumab significantly inhibited tumor blood vessel growth rate and improved survival rate.

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References:

[1]Haneen Sadick, Elena SchÄfer, Christel Weiss, et al. An in vitro study on the effect of bevacizumab on endothelial cell proliferation and VEGF concentration level in patients with hereditary hemorrhagic telangiectasia[J].Experimental and Therapeutic Medicine.July 5, 2022.11493.
[2]Von Baumgarten L , Brucker D , Tirniceru A ,et al. Bevacizumab Has Differential and Dose-Dependent Effects on Glioma Blood Vessels and Tumor Cells[J].Clinical Cancer Research, 2011, 17(19):6192-205.

Background

Bevacizumab is a humanized monoclonal antibody against VEGF. It specifically binds to VEGF and blocks its binding to the corresponding receptors on the cell surface, thereby inhibiting angiogenesis[1]. Bevacizumab has high affinity for all VEGF-A isoforms and inhibits its interaction with VEGFR-1 and VEGFR-2[2]. Bevacizumab is a targeted therapy drug called an angiogenesis inhibitor that is used to study and treat many types of cancer [3].

In vitro, In vitro, low-concentration Bevacizumab (2-4 mg/ml) treated intranasal endothelial cells in HHT patients, significantly reducing the expression of VEGF after 24 hours, but it increased again after 48 hours, and exceeding 4 mg/ml would produce cytotoxic effects[4]. Bevacizumab (5-1000 ng/mL) does not cause cell death after treating U87-RFP cells for 48 hours [5].

In vivo, Bevacizumab (5 and 25 mg/kg) treated by intraperitoneal injection in mice with orthotopic glioma significantly inhibited the growth rate of tumor blood vessels and improved the survival rate[5]. Intraperitoneal administration of Bevacizumab (5 mg/kg) can prolong the survival of ovarian cancer model mice[6]. Bevacizumab (5mg/kg) showed strong anti-angiogenic activity in the treatment of osteosarcoma model mice[7].

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References:
[1] Minckwitz G V , Eidtmann H , Rezai M ,et al.Neoadjuvant Chemotherapy and Bevacizumab for HER2-Negative Breast Cancer[J].New England Journal of Medicine, 2012.
[2] Tan H, et al. 99mTc-labeled bevacizumab for detecting atherosclerotic plaque linked to plaque neovascularization and monitoring antiangiogenic effects of treatment in ApoE-/-mice. [J]Sci Rep. 2017 Jun 14;7(1):3504.
[3]Pujade-Lauraine.Bevacizumab Combined With Chemotherapy for PlatinumResistant Recurrent Ovarian Cancer: The AURELIA Open-Label Randomized Phase III Trial [J].Journal of Clinical Oncology, 2014.
[4]Haneen Sadick, Elena SchÄfer, Christel Weiss, et al. An in vitro study on the effect of bevacizumab on endothelial cell proliferation and VEGF concentration level in patients with hereditary hemorrhagic telangiectasia[J].Experimental and Therapeutic Medicine.July 5, 2022.11493.
[5]Von Baumgarten L , Brucker D , Tirniceru A ,et al. Bevacizumab Has Differential and Dose-Dependent Effects on Glioma Blood Vessels and Tumor Cells[J].Clinical Cancer Research, 2011, 17(19):6192-205.
[6]Mabuchi S , Terai Y , Morishige K ,et al.Maintenance treatment with bevacizumab prolongs survival in an in vivo ovarian cancer model.[J]Clinical Cancer Research , 2008, 14(23):7781-9.
[7]Zhao Z X , Li X , Liu W D , et al. Inhibition of Growth and Metastasis of Tumor in Nude Mice after Intraperitoneal Injection of Bevacizumab[J]. Orthopaedic Sugery. 2016.234-240.

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