

Product Data Sheet

Product Name: Zilovertamab

Cat. No.: GC66327

Chemical Properties

Cas. No. 2485779-13-1

Formula M.Wt 144.57kDa

Solubility Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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

Zilovertamab

Protocol

Cell experiment [1]:

Cell lines CaOV3 cells

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

CaOV3 cells were cultivated in a 24-well plate at a density of 5×10^5 cells/ml in RPMI-1640 medium supplemented with 10% fetal calf serum (FCS), 1% GlutaMAX and 1% penicillin/streptomycin. Cells were treated with Zilovetamab (50 μ g/ml) for 72h. The cell viability and ROR1 expression levels were determined.

Reaction Conditions 50 μ g/ml; 72h

Applications Zilovetamab treatment reduced the cell viability and downregulated ROR1 expression levels in CaOV3 cells.

Animal experiment [2]:

Animal models Rag2^{-/-} γ C^{-/-} mice

Rag2^{-/-} γ C^{-/-} mice (4 weeks old) were maintained in a controlled environment at 22 $\pm$ 3°C and 60% relative humidity under a 12h light/dark cycle, and were given free access to standard rodent nutrition and water. Breast cancer cells (1×10^5 , in phosphate buffered saline) were subcutaneously injected into the mammary pads of mice (5 mice per group). When tumors became palpable, the tumor-bearing mice were treated with Zilovetamab (10mg/kg) for 6 weeks (every two weeks; i.v.). Tumor size was measured every 4 days using a caliper, and tumor volume was calculated using the standard formula $V = \text{length} \times \text{width}^2 / 2$.

Dosage form 10mg/kg; every two weeks for 6 weeks; i.p.

Applications Zilovetamab treatment significantly inhibited tumor growth in mice bearing breast cancer cells.

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

References:

- [1] Liu D, Kaufmann G F, Breitmeyer J B, et al. The anti-ROR1 monoclonal antibody zilovetamab inhibits the proliferation of ovarian and endometrial cancer cells[J]. *Pharmaceutics*, 2022, 14(4): 837.
- [2] Zhang S, Zhang H, Ghia E M, et al. Inhibition of chemotherapy resistant breast cancer stem cells by a ROR1 specific antibody[J]. *Proceedings of the National Academy of Sciences*, 2019, 116(4): 1370-1377.

Background

Zilovetamab is a humanized monoclonal antibody that inhibits the tumor promoting activity of the cancer stem cell antigen ROR1 [1]. Zilovetamab can inhibit ROR1-signaling and cancer-stemness gene expression in cancer cells, and impair metastases [2]. Zilovetamab has been widely used to inhibit the proliferation of various cancer cells and is employed in the development of combined therapies to effectively suppress tumor invasion[3].

In vitro, Zilovetamab (50µg/ml) treatment for 72 hours significantly inhibited the proliferation of CaOV3, CaOV3CisR and PEO1 cells[4]. Treatment with 20µg/ml Zilovetamab for 24 hours can inhibit the release of MMP-9 by chronic lymphocytic leukemia (CLL) cells promoted by Wnt5a[5]. Treatment with 10µg/ml Zilovetamab for 4 days can inhibit the proliferation of mantle cell lymphoma (MCL) cells promoted by Wnt5a and reduce the proportion of cells in the S/G2 phase[6].

In vivo, Zilovetamab treatment via daily intraperitoneal injection at a dose of 1mg/kg for 7 days significantly reduced the burden of leukemia cells in Rag2^{-/-}γC^{-/-} mice[7]. Zilovetamab (10mg/kg) was administered intravenously once every two weeks for a total of 6 weeks, which significantly inhibited the occurrence of lung metastasis in mice bearing breast cancer patient-derived xenografts (PDX) and markedly reduced the number of metastatic lesions[8].

References:

- [1] Lee H J, Choi M Y, Siddiqi T, et al. Phase 1/2 study of zilovetamab and ibrutinib in mantle cell lymphoma (MCL), chronic lymphocytic leukemia (CLL), or marginal zone lymphoma (MZL)[J]. 2022.
- [2] Shatsky R A, Batra-Sharma H, Helsten T, et al. A phase 1b study of zilovetamab in combination with paclitaxel for locally advanced/unresectable or metastatic Her2-negative breast cancer[J]. *Breast*

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Cancer Research, 2024, 26(1): 32.

[3] Hasan M K, Widhopf II G F, Kipps T J. Combined Therapy of Zanubrutinib and Zilovertamab in the Inhibition of Invasive Capability of Chronic Lymphocytic Leukemia Cells[J]. Blood, 2023, 142: 6517.

[4] Liu D, Kaufmann G F, Breitmeyer J B, et al. The anti-ROR1 monoclonal antibody zilovertamab inhibits the proliferation of ovarian and endometrial cancer cells[J]. Pharmaceutics, 2022, 14(4): 837.

[5] Hasan M K, Widhopf II G F, Ghia E M, et al. Wnt5a induces ROR1 dependent NF- κ B activation to enhance MMP-9 expression and invasiveness in chronic lymphocytic leukemia: CHRONIC LYMPHOCYTIC LEUKEMIA[J]. Leukemia, 2025, 39(7): 1661-1669.

[6] Yu J, Chen Y, Chen L, et al. Cirmtuzumab inhibits ibrutinib-resistant, Wnt5a-induced Rac1 activation and proliferation in mantle cell lymphoma[J]. Oncotarget, 2018, 9(37): 24731.

[7] Yu J, Chen L, Cui B, et al. Cirmtuzumab inhibits Wnt5a-induced Rac1 activation in chronic lymphocytic leukemia treated with ibrutinib[J]. Leukemia, 2017, 31(6): 1333-1339.

[8] Zhang S, Zhang H, Ghia E M, et al. Inhibition of chemotherapy resistant breast cancer stem cells by a ROR1 specific antibody[J]. Proceedings of the National Academy of Sciences, 2019, 116(4): 1370-1377.

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA