
Product Data Sheet

Product Name: Narsoplimab

Cat. No.: GC69538

Chemical Properties

Cas. No. 2108782-45-0

Formula M.Wt

Solubility Storage Store at -80°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 **Protocol****Cell experiment [1]:**

Cell lines primary human neonatal microvascular endothelial cell

Preparation Method

Narsoplimab was planned for intravenous infusion at a dose of 4 mg/kg twice weekly in both adult and pediatric patients for at least 8 doses, on the basis of evidence that this dosage provided well greater than 80% inhibition of the lectin pathway. In case of incomplete response and in the absence of any toxicity, treatment could be prolonged with no limit to the number of infusions. For one patient, the dosage was increased to 3 times a week due to a poor initial response to the treatment.

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

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Reaction Conditions 10µg/ml; 5h

Applications Narsoplimab suppressed transcripts encoding pro-apoptotic and pro-inflammatory proteins ZNF521, IL1R1, Fibulin-5, aggrecan, SLC14A1, and LOX1, and TMEM204, which disrupts vascular integrity.

References:

[1]Elhadad, Sonia et al. "MASP2 inhibition by Narsoplimab suppresses endotheliopathies characteristic of transplant-associated thrombotic microangiopathy: in vitro and ex vivo evidence." *Clinical and experimental immunology* vol. 213,2 (2023): 252-264.
doi:10.1093/cei/uxad055

Background

Narsoplimab (anti-MASP-2) is a human immunoglobulin gamma 4 (IgG4) monoclonal antibody against mannose-binding protein-associated serine protease 2 (MASP-2) achieved by high affinity (zymogen form: $K_D=0.062\text{nM}$, $IC_{50}\sim 3.4\text{nM}$; enzymatically active form: $K_D=0.089\text{nM}$) to block lectin pathway^[1]. Narsoplimab selectively inhibits human C5b-9, $IC_{50}\sim 1\text{nM}$; its potency in cynomolgus monkey serum was $IC_{50}\sim 33\text{nM}$. The efficiency of Narsoplimab is $EC_{50}=6.1\mu\text{g/mL}$ *ex vivo* and $IC_{50}=33\text{nM}$ *in vitro* ^[1]. Narsoplimab shows positive potential results in hematopoietic stem-cell transplantation-associated thrombotic microangiopathy (HSCT-TMA) in a clinical trial^[2].

In vitro experiments show that Narsoplimab act as a positive control to evaluate inhibitory efficiency among the N proteins of SARS-CoV, MERS-CoV and SARS-CoV-

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2(purified human MASP-2; 2.4µg/ml at 37°C; 3h)^[3]. Moreover, MASP2 inhibition by Narsoplimab suppresses endotheliopathies characteristic of transplant-associated thrombotic microangiopathy (primary human neonatal microvascular endothelial cell; 10µg/ml; 5h)^[4].

References:

- [1] Dudler, Thomas et al. "Development and characterization of narsoplimab, a selective MASP-2 inhibitor, for the treatment of lectin-pathway-mediated disorders." *Frontiers in immunology* vol. 14 1297352. 8 Nov. 2023, doi:10.3389/fimmu.2023.1297352
- [2] Khaled, Samer K et al. "Narsoplimab, a Mannan-Binding Lectin-Associated Serine Protease-2 Inhibitor, for the Treatment of Adult Hematopoietic Stem-Cell Transplantation-Associated Thrombotic Microangiopathy." *Journal of clinical oncology : official journal of the American Society of Clinical Oncology* vol. 40,22 (2022): 2447-2457. doi:10.1200/JCO.21.02389
- [3] Gao, Ting et al. "Highly pathogenic coronavirus N protein aggravates inflammation by MASP-2-mediated lectin complement pathway overactivation." *Signal transduction and targeted therapy* vol. 7,1 318. 14 Sep. 2022, doi:10.1038/s41392-022-01133-5
- [4] Elhadad, Sonia et al. "MASP2 inhibition by narsoplimab suppresses endotheliopathies characteristic of transplant-associated thrombotic microangiopathy: in vitro and ex vivo evidence." *Clinical and experimental immunology* vol. 213,2 (2023): 252-264. doi:10.1093/cei/uxad055

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