

Product Data Sheet

Product Name: INCB086550 (PD-1/PD-L1-IN-8)

Cat. No.: GC62688

Chemical Properties

Cas. No. 2230911-59-6

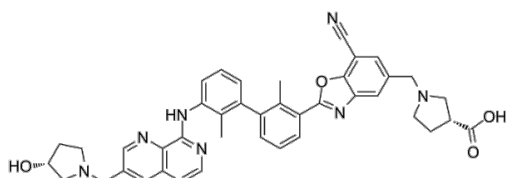
Formula $C_{41}H_{39}N_7O_4$ M.Wt 693.79

Solubility H₂O : 83.33 mg/mL (120.11 mM; ultrasonic and adjust pH to 3 with HCl) 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



Protocol

Cell experiment [1]:

Cell lines CHO-K1 cells

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

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CHO-K1 cells were cultured in F-12 medium supplemented with 10% fetal bovine serum (FBS) and antibiotics (penicillin 100U/ml, streptomycin 0.1mg/ml) under normal conditions (5% CO₂ with 95% humidified air). CHO-K1 cells were seeded at a density of 3×10^5 cells per well in a 6-well plate. After 24 hours, the cells were treated with different concentrations of INCB086550 (0.01, 0.1, 1, 10, 100, 1000, and 10000nM) for 18 hours. The cells were collected, washed with PBS, and stained with the fluorescently labeled anti-PD-L1 clone 28-8 at room temperature for 30 minutes. The samples were then analyzed using a flow cytometer.

Reaction Conditions 0.01, 0.1, 1, 10, 100, 1000, and 10000nM; 18h

Applications INCB086550 treatment decreased available surface PD-L1 in CHO-K1 in a dose of manner.

Animal experiment [2]:

Animal models Female BALB/c mice

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Preparation Method

6-week-old female BALB/c mice were housed under specific pathogen-free conditions with a 12-h light/dark cycle and provided with standard chow and water ad libitum. Mice were injected subcutaneously in the axilla with 5×10^6 4T1-hPD-L1 cells for each mouse. When the tumor volume in the mice reached approximately 100mm^3 (around 1 week), mice were randomly assigned into four groups: the Vehicle group (Veh), the INCB086550 group (INC), the Deucravacitinib group (Deu), and the Combination group (Com). The Veh, INC, Deu, and Com groups were respectively intraperitoneally administered with the vehicle, 15mg/kg INCB086550 (twice daily), 20mg/kg Deucravacitinib (twice daily), and a combination of 15mg/kg INCB086550 (BID) plus 20mg/kg Deucravacitinib (twice daily). The vehicles for both Deucravacitinib and INCB086550 consisted of a solution with 5% dimethyl sulfoxide, 40% PEG300, 5% Tween 80, and 50% H₂O. The administration of INCB086550 began 2 weeks prior to the initiation of Deucravacitinib treatment, with a total treatment duration of 4 weeks for INCB086550 and 2 weeks for Deucravacitinib. The mice were monitored twice weekly for body weight and tumor volume.

Dosage form 15mg/kg; twice daily for 4 weeks; i.p.

Applications INCB086550 treatment combined with Deucravacitinib reduced the tumor volume in 4T1-hPD-L1 cell-xenograft mouse models.

References:

- [1] Koblish H K, Wu L, Wang L C S, et al. Characterization of INCB086550: a potent and novel small-molecule PD-L1 inhibitor[J]. Cancer Discovery, 2022, 12(6): 1482-1499.
- [2] Xiang H, Tu B, Feng X, et al. Dual inhibition of TYK2 and PD-L1 boosts immune response in triple negative breast cancer[J]. Anti-Cancer Drugs, 2025, 36(4): 280-289.

Background

INCB086550 (PD-1/PD-L1-IN-8) is a potent, oral, small-molecule PD-L1 inhibitor with an IC₅₀ value

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of 3.1nM [1]. INCB086550 directly blocks the binding sites of PD-1 and PD-L1, and mediates the dimerization and endocytosis of PD-L1 [2]. INCB086550 has been widely used in the humanized PD-L1 MC38 mouse model to inhibit tumor growth and for the pharmacodynamic comparison studies of different PD-L1 small molecule inhibitors [3].

In vitro, INCB086550 treatment (1 μ M) for 48 hours significantly inhibited the viability of CHO-K1 cells with overexpression of TCR activator and human PD-L1 on the cell surface [4]. Treatment with 1 μ M INCB086550 for 18 hours blocked the PD-1-mediated signal transduction in CHO-K1 cells and stimulated cellular immune activation [5].

In vivo, INCB086550 treatment (15mg/kg; twice daily for 4 weeks) via intraperitoneal injection combined with Deucravacitinib reduced the tumor volume in 4T1-hPD-L1 cell-xenograft mouse models [6].

References:

- [1] Yang D M, Kang Y W, Kim K, et al. Discovery of novel indoline derivatives as potent small molecule PD-L1 inhibitors[J]. Bioorganic & Medicinal Chemistry Letters, 2025: 130458.
- [2] Chen L, Zhao X, Liu X, et al. Development of small molecule drugs targeting immune checkpoints[J]. Cancer Biology & Medicine, 2024, 21(5): 382-399.
- [3] Roose H, Rekstyle-Matiene K, Stevens S, et al. 1381 Discovery of ALG-093989, a highly potent and orally bioavailable small molecule PD-L1 inhibitor for the treatment of cancers[J]. 2023.
- [4] Slota A, Golebiowska-Mendroch K, Kocik-Krol J, et al. Characterization of Clinically Evaluated Small-Molecule Inhibitors of PD-L1 for Immunotherapy[J]. ACS Medicinal Chemistry Letters, 2025.
- [5] Koblisch H K, Wu L, Wang L C S, et al. Characterization of INCB086550: a potent and novel small-molecule PD-L1 inhibitor[J]. Cancer Discovery, 2022, 12(6): 1482-1499.
- [6] Xiang H, Tu B, Feng X, et al. Dual inhibition of TYK2 and PD-L1 boosts immune response in triple negative breast cancer[J]. Anti-Cancer Drugs, 2025, 36(4): 280-289.

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