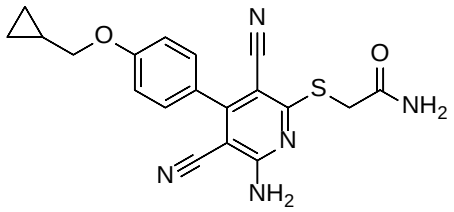
Product data sheet

MedKoo Cat#: 531563 Name: BAY 60-6583 CAS#: 910487-58-0 Chemical Formula: $C_{19}H_{17}N_5O_2S$ Exact Mass: 379.1103 Molecular Weight: 379.44	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
BAY 60-6583 is a selective and potent agonist of adenosine A2B receptor with EC50 value of 3 nM. The adenosine A2B receptor plays an important role in anti-inflammatory response and pre/postconditioning cardioprotective.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	25.0	65.89
DMSO	55.98	147.53
DMSO:PBS (pH 7.2) (1:3)	0.25	0.66
Ethanol	0.30	0.79

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.64 mL	13.18 mL	26.35 mL
5 mM	0.53 mL	2.64 mL	5.27 mL
10 mM	0.26 mL	1.32 mL	2.64 mL
50 mM	0.05 mL	0.26 mL	0.53 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Xu X, Zhu Q, Niu F, Zhang R, Wang Y, Wang W, Sun D, Wang X, Wang A. A2BAR activation attenuates acute lung injury by inhibiting alveolar epithelial cell apoptosis both in vivo and in vitro. Am J Physiol Cell Physiol. 2018 Oct 1;315(4):C558-C570. doi: 10.1152/ajpcell.00294.2017. Epub 2018 Jun 13. PMID: 29898376.
2. Tang J, Zou Y, Li L, Lu F, Xu H, Ren P, Bai F, Niedermann G, Zhu X. BAY 60-6583 Enhances the Antitumor Function of Chimeric Antigen Receptor-Modified T Cells Independent of the Adenosine A2b Receptor. Front Pharmacol. 2021 Mar 12;12:619800. doi: 10.3389/fphar.2021.619800. PMID: 33776765; PMCID: PMC7994267.

In vivo study

1. Xu X, Zhu Q, Niu F, Zhang R, Wang Y, Wang W, Sun D, Wang X, Wang A. A2BAR activation attenuates acute lung injury by inhibiting alveolar epithelial cell apoptosis both in vivo and in vitro. Am J Physiol Cell Physiol. 2018 Oct 1;315(4):C558-C570. doi: 10.1152/ajpcell.00294.2017. Epub 2018 Jun 13. PMID: 29898376.
2. Tang J, Zou Y, Li L, Lu F, Xu H, Ren P, Bai F, Niedermann G, Zhu X. BAY 60-6583 Enhances the Antitumor Function of Chimeric Antigen Receptor-Modified T Cells Independent of the Adenosine A2b Receptor. Front Pharmacol. 2021 Mar 12;12:619800. doi: 10.3389/fphar.2021.619800. PMID: 33776765; PMCID: PMC7994267.

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7. Bioactivity

Biological target: BAY 60-6583 is an agonist of adenosine A2B receptor with an EC50 of 3 nM.

In vitro activity

Whether BAY 60-6583 enhances the antitumor activity of CAR T cells in vitro and, if so, whether this is CAR dependent, was evaluated. In the presence of BAY 60-6583, a higher level of cytokine production was observed for anti-CD133 (Figures 3A–C) and anti-HER2 (Supplementary Figure S2A–C) CAR T cells following antigen-specific stimulation, while no changes were observed when the CAR T cells were incubated with non-target tumor cells. Consistently, the tumor cell-killing capacity of CAR T cells was also enhanced when BAY 60-6583 was added and the viability of non-target tumors was not affected (Figure 3D and Supplementary Figure S2D). In addition, BAY 60-6583 treatment also enhanced the proliferative ability of CAR T cells when stimulated by target tumor cells.

Reference: Front Pharmacol. 2021 Mar 12;12:619800. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7994267/

In vivo activity

The functionality of CAR T cells in vivo in the presence of BAY 60-6583 was investigated. NPSG mice were injected with luciferase-expressing MDA-MB-453 cells subcutaneously on day –7, and anti-HER2 CAR T cells were injected intravenously on day 0. After CAR T cell treatment, 20 μg BAY 60-6583 was administered intravenously daily (Figure 5A). BAY 60-6583 injection did not cause any apparent toxicity (Figure 5B). Compared to the vehicle control, daily treatment with 20 μg BAY 60-6583 had a stronger tumor-suppressive effect (Figures 5C,D). Taken together, the data indicate that BAY 60-6583 can enhance the antitumor activity of CAR T cells in tumor models in vivo.

Reference: Front Pharmacol. 2021 Mar 12;12:619800. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7994267/