# PRODUCT INFORMATION

## JTE-907

*Item No. 10009857*

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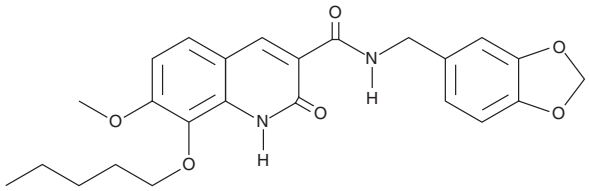
| **CAS Registry No.:** | 282089-49-0 |
| **Formal Name:** | N-(1,3-benzodioxol-5-ylmethyl)-1,2-dihydro-7-methoxy-2-oxo-8-(pentyloxy)-3-quinolinecarboxamide |
| **MF:** | $C_{24}H_{26}N_2O_6$ |
| **FW:** | 438.5 |
| **Purity:** | ≥98% |
| **UV/Vis.:** | $\lambda_{max}$: 222, 264, 331 nm |
| **Supplied as:** | A crystalline solid |
| **Storage:** | -20°C |
| **Stability:** | ≥4 years |



*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Laboratory Procedures

JTE-907 is supplied as a crystalline solid. A stock solution may be made by dissolving the JTE-907 in the solvent of choice, which should be purged with an inert gas. JTE-907 is soluble in organic solvents such as methanol, DMSO and dimethyl formamide (DMF). The solubility of JTE-907 in these solvents is approximately 1, 0.16 and 16.6 mg/ml, respectively.

JTE-907 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, JTE-907 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. JTE-907 has a solubility of approximately 0.2 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

JTE-907 is a cannabinoid 2 ($CB_2$) receptor inverse agonist.[1]It is selective for $CB_2$ over $CB_1$ receptors ($K_i$s = 35.9 and 2,370 nM, respectively, for the human receptors). JTE-907 increases forskolin-induced cAMP production in CHO cells expressing human or mouse $CB_2$ receptors in a concentration-dependent manner. It promotes the differentiation of isolated mouse splenic $CD4^+$ T cells into regulatory T cells (Tregs) when used at a concentration of 100 nM and decreases disease severity in a mouse model of inflammatory bowel disease (IBD) induced by dinitrobenzene sulfonic acid (DNBS).[2] JTE-907 (1 and 10 mg/kg) inhibits spontaneous scratching in a mouse model of chronic dermatitis, as well as reduces carrageenan-induced paw edema in mice ($ED_{50}$ = 0.05 mg/kg).[1,3] Bilateral injection of JTE-907 (25 pmol/animal) into the anterior bed nucleus of the stria terminalis decreases the percentage of time spent in the open arms of the elevated plus maze in mice, indicating anxiety-like behavior.[4]

### References


1. Iwamura, H., Suzuki, H., Ueda, Y., *et al*. In vitro and in vivo pharmacological characterization of JTE-907, a novel selection ligand for cannabinoid $CB_2$ receptor. *J. Pharmacol. Exp. Ther.* **296(2)**, 420-425 (2001).
2. Gentili, M., Ronchetti, S., Ricci, E., *et al*. Selective CB2 inverse agonist JTE907 drives T cell differentiation towards a Treg cell phenotype and ameliorates inflammation in a mouse model of inflammatory bowel disease. *Pharmacol. Res.* **141**, 21-31 (2019).
3. Maekawa, T., Nojima, H., Kuraishi, Y., *et al*. The cannabinoid $CB_2$ receptor inverse agonist JTE-907 suppresses spontaneous itch-associated responses of NC mice, a model of atopic dermatitis. *Euro. J. Pharmacol.* **542(1-3)**, 179-183 (2006).
4. Gomes-de-Souza, L., Bianchi, P.C., Costa-Ferreira, W., *et al*. $CB_1$ and $CB_2$ receptors in the bed nucleus of the stria terminalis differently modulate anxiety-like behaviors in rats. *Prog. Neuropsychopharmacol. Biol. Psychiatry* **110**, 110284 (2021).





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