# Product Data Sheet

Product Name: MK-0812
Cat. No.: GC11636

## Chemical Properties

| | | | |
|---|---|---|---|
| Cas. No. | 624733-88-6 | | |
| Chemical Name | (1-isopropyl-3-((3-methoxytetrahydro-2H-pyran-4-yl)amino)cyclopentyl)(3-(trifluoromethyl)-7,8-dihydro-1,6-naphthyridin-6(5H)-yl)methanone | | |
| SMILES | CC(C1(C(N2CCC3=NC=C(C(F)(F)F)C=C3C2)=O)CCC(NC4CCOCC4OC)C1)C | | |
| Formula | $C_{24}H_{34}F_3N_3O_3$ | M.Wt | 469.54 |
| Solubility | DMF: 15 mg/ml,DMF:PBS (pH 7.2) (1:20): 0.04 mg/ml,DMSO: 1 mg/ml,Ethanol: 10 mg/ml | Storage | Store at -20°C |
| General tips | For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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 | MK-0812 | | |

## Protocol


***Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com***
***Address: 10292 Central Ave. #205, Montclair, CA, USA***

## Product Data Sheet

**Kinase experiment:**

Human whole blood is collected in EDTA tubes and used within 1 h of blood collection. For antagonist treated samples, blood (200 ?L) is pre-incubated with MK-0812 (0.1% final DMSO concentration) for 30 min at room temperature. After which, 20 ?L of FITC conjugated anti-CD14 antibody and 4 ?L of chemokine or buffer is added to each sample and mixed lightly. An aliquot (100 ?L) of the blood mixture is incubated for 10 min at 37°C, immediately placed on ice and lightly fixed with 250 ?L of ice cold fixative (49 mL PBS, 1.0 mL 4% para-formaldehyde) for 1 min. Red blood cells are lysed by adding 1.0 mL of ice cold lysis solution (0.15 M $NH_4Cl_2$, 10 mM sodium bicarbonate, and 1 mM EDTA), and incubated for 20 min on ice. After complete lysis of red blood cells, 100 ?L of 4% para-formaldehyde is added and the samples are analyzed by flow cytometry for forward scatter measurements[1].

**Animal experiment:**

Mice[2] Female BALB/c mice are used between 8 and 10 weeks of age. SCH563705 or MK0812 are administered in a 0.4% MC solution by 30 mg/kg oral gavage (p.o.). Two hours later, the frequency of CD11b+Ly6G-Ly6Chi monocytes and CD11b+Ly6G+Ly6C+ neutrophils is determined by flow cytometry.


***Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com***
***Address: 10292 Central Ave. #205, Montclair, CA, USA***

References:

[1]. Wisniewski T, et al. Assessment of chemokine receptor function on monocytes in whole blood: In vitro and ex vivo evaluations of a CCR2 antagonist.J Immunol Methods. 2010 Jan 31;352(1-2):101-10.
[2]. Min SH, et al. Pharmacological targeting reveals distinct roles for CXCR2/CXCR1 and CCR2 in a mouse model of arthritis.Biochem Biophys Res Commun. 2010 Jan 1;391(1):1080-6.

## Background

MK-0812 is an antagonist of chemokine receptor CCR-2 [1].

## Product Data Sheet

C-C chemokine receptor type 2 (CCR-2) is a chemokine receptor expressing on monocytes and macrophages and plays a critical and apparently non-redundant role in orchestrating the trafficking of monocytes to tissues [1].
In human whole blood, MK-0812 completely blocked all MCP-1 mediated response with IC50 value of 3.2 nM in a concentration dependent way, which is similar to the inhibition of 125I-MCP-1 binding by MK-0812 on isolated monocytes (IC50 4.5 nM). Also, MK-0812 resulted in a monocyte forward scatter measurement below unstimulated or basal levels. In rhesus whole blood, MK-0812 inhibited monocyte shape change with IC50 value of 8 nM. MK-0812 inhibited monocyte recruitment in a dose-dependent way which related with the inhibition of MCP-1 induced monocyte shape change [1].
In naive BALB/c mice, MK-0812 (30 mg/kg) reduced the frequency of Ly6G-Ly6Chi monocytes in the peripheral blood. In addition, MK-0812 reduced circulating Ly6Chi monocytes and increased the CCR2 ligand CCL2 in a dose-dependent way [2].

*References:*

*[1]. Wisniewski T, Bayne E, Flanagan J, et al. Assessment of chemokine receptor function on monocytes in whole blood: In vitro and ex vivo evaluations of a CCR2 antagonist. J Immunol Methods, 2010, 352(1-2): 101-110.*

*[2]. Min SH, Wang Y, Gonsiorek W, et al. Pharmacological targeting reveals distinct roles for CXCR2/CXCR1 and CCR2 in a mouse model of arthritis. Biochem Biophys Res Commun, 2010, 391(1): 1080-1086.*


***Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com***
***Address: 10292 Central Ave. #205, Montclair, CA, USA***