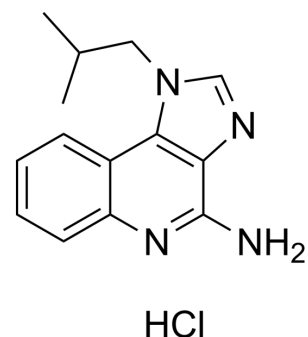


## Imiquimod hydrochloride

<b>Cat. No.:</b>	HY-B0180A
<b>CAS No.:</b>	99011-78-6
<b>Molecular Formula:</b>	C <sub>14</sub> H <sub>17</sub> ClN <sub>4</sub>
<b>Molecular Weight:</b>	276.76
<b>Target:</b>	Toll-like Receptor (TLR); Autophagy; SARS-CoV; HSV
<b>Pathway:</b>	Immunology/Inflammation; Autophagy; Anti-infection
<b>Storage:</b>	4°C, sealed storage, away from moisture * In solvent : -80°C, 1 year; -20°C, 6 months (sealed storage, away from moisture)



### SOLVENT & SOLUBILITY

#### In Vitro

Methanol : 24 mg/mL (86.72 mM; Need ultrasonic)  
 DMSO : 8 mg/mL (28.91 mM; ultrasonic and warming and heat to 50°C)  
 H<sub>2</sub>O : 4.8 mg/mL (17.34 mM; Need ultrasonic)  
 Ethanol : 3.85 mg/mL (13.91 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.6132 mL	18.0662 mL	36.1324 mL
	5 mM	0.7226 mL	3.6132 mL	7.2265 mL
	10 mM	0.3613 mL	1.8066 mL	3.6132 mL

Please refer to the solubility information to select the appropriate solvent.

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 0.8 mg/mL (2.89 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: 0.8 mg/mL (2.89 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 0.8 mg/mL (2.89 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Imiquimod hydrochloride (R 837 hydrochloride), an immune response modifier, is a selective toll like receptor 7 (TLR7) agonist. Imiquimod hydrochloride exhibits antiviral and antitumor effects in vivo. Imiquimod hydrochloride can be used for the research of external genital, perianal warts, cancer and COVID-19<sup>[1][2]</sup>.

#### IC<sub>50</sub> & Target

TLR7	HSV-1
------	-------

## In Vivo

In animal models, Imiquimod hydrochloride stimulates the innate immune response by increasing NK cell activity, activating macrophages to secrete cytokines and nitric oxide, and inducing proliferation and differentiation of B lymphocytes. Imiquimod hydrochloride stimulates the innate immune response through induction, synthesis, and release of cytokines, including interferon- $\alpha$  (IFN- $\alpha$ ), interleukin (IL)-6, and tumour necrosis factor (TNF)- $\alpha$ <sup>[1]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Nat Commun. 2022 Jul 22;13(1):4255.
- Nat Commun. 2016 May 25;7:11724.
- Nucleic Acids Res. 2021 Jan 8;49(D1):D1113-D1121.
- Biomaterials. 2022 Feb 14;282:121411.
- Biomaterials. 2021, 120724.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

- [1]. Athina Angelopoulou, et al. Imiquimod - A toll like receptor 7 agonist - Is an ideal option for management of COVID 19. Environ Res. 2020 Sep; 188: 109858.
- [2]. Michael P Schön, et al. The small antitumoral immune response modifier imiquimod interacts with adenosine receptor signaling in a TLR7- and TLR8-independent fashion. J Invest Dermatol. 2006 Jun;126(6):1338-47.
- [3]. Aditya K Gupta, et al. Imiquimod: a review. J Cutan Med Surg. Nov-Dec 2002;6(6):554-60.
- [4]. Yuji Kan, et al. Imiquimod suppresses propagation of herpes simplex virus 1 by upregulation of cystatin A via the adenosine receptor A1 pathway. J Virol. 2012 Oct;86(19):10338-46.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA