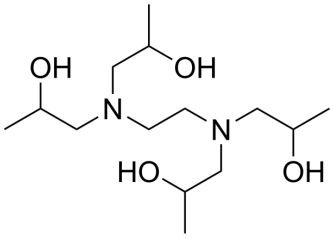
Quadrol

Cat. No.:	HY-B2149
CAS No.:	102-60-3
Molecular Formula:	$C_{14}H_{32}N_2O_4$
Molecular Weight:	292.41
Target:	Others
Pathway:	Others
Storage:	Pure form -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

Ethanol : 100 mg/mL (341.99 mM; Need ultrasonic)
DMSO : 100 mg/mL (341.99 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.4199 mL	17.0993 mL	34.1986 mL
	5 mM	0.6840 mL	3.4199 mL	6.8397 mL
	10 mM	0.3420 mL	1.7099 mL	3.4199 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.55 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.55 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.55 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Quadrol is an immunostimulant and has been implicated as a potentially useful agent in accelerated wound healing.

In Vitro

Results show that viability of macrophages incubated with Quadrol at concentrations of 0.5 mM, 1 mM and 4mM are identical to that for controls. Viability, however, is reduced to 50% of control at concentrations of 16 mM to 32 mM. After four hours, at concentrations of 1 mM and 4 mM, Quadrol produces enhanced spreading of 88% and 80%, respectively, as compared to the control of 28%. Quadrol, at a concentration of 16 mM, shows reduced percentage of spreading of macrophages after four hours. Exposure of macrophages to 1.0 mM or 4.0 mM Quadrol concentrations enhances phagocytic

	activity, 41% and 57%, respectively, over that of the cells exposed to media alone (34%)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	On day eight after the implantation, the amount of collagen in the implants of normal mice injected with Quadrol exceeds controls by more than 200% ($p<0.025$). By day 11, the collagen content increases to over 300% higher than controls ($p<0.01$) and by the end of two weeks after wounding, the time interval typically required for normal and complete wound healing, the collagen accumulated in the implants of the Quadrol-treated mice is about 50% above control ($p<0.1$). The accumulation of collagen in the implants of Quadrol treated STZ-diabetic mice about 100% above the untreated diabetic control on days 8 to 11. By day 14, the collagen deposition has increased to 200% above the controls ($p<0.0\ 5$)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	The standard trypan blue exclusion test is performed to measure cell viability (10). Cells are exposed to increasing concentrations of Quadrol (0.5 mM to 32 mM) and incubated at 37°C for varying lengths of time before treatment with trypan blue[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2]	At the time of polytetrafluoroethylene (PTFE) tubing implantation, six test groups (3 streptozotocin-induced (STZ) diabetic and 3 non-diabetic) consisting of 5 to 7 animals per sampling time receive either diluent (control group) or Quadrol (10 mM) injected approximately 1 cm from the implantation site. The PTFE implants recovered from the mice after 2 to 14 days are stored frozen until processed and then analyzed by the HPLC method[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Bhide MV, et al. In vitro stimulation of macrophages by quadrol [N,N,N',N'-tetrakis(2-hydroxypropyl)ethylenediamine]. J Immunopharmacol. 1985;7(3):303-12.

[2]. Bhide MV, et al. Promotion of wound collagen formation in normal and diabetic mice by quadrol. Immunopharmacol Immunotoxicol. 1988;10(4):513-22.

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