Gelatins

Cat. No.: HY-Y1365

CAS No.: 9000-70-8

Target: Environmental Pollutants; Biochemical Assay Reagents

Pathway: Others

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

Gelatins

SOLVENT & SOLUBILITY

In Vitro	H_2O : 50 mg/mL (Need ultrasonic) DMSO : 4.55 mg/mL (ultrasonic and warming and heat to 60°C)
In Vivo	1. Add each solvent one by one: PBS Solubility: 10 mg/mL (Infinity mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Gelatins is a non-toxic, non carcinogenic, biodegradable, and non irritating natural polymer derived from partial hydrolysis of collagen. Due to its strong liquid absorption and swelling ability, Gelatins has excellent hemostatic properties and can be used as a matrix material for the reduction, growth, and stability of metal nanoparticles. Gelatins can also be used for tumor cell culture and tumor therapy[1][2][3].

In Vitro

Gelatins (6-12 %, 5 days) forms gelatin@NWF Derivatives serve as long-term storage scaffolds to promote the formation of prostate tumor cell spheroids for culturing tumor cells[3].

Gelatins (0-200 μg/mL, 24 h) can enhance cell adhesion, growth, and wound healing of HaCaT cells, and protect HaCaT cells from H_2O_2 induced cell damage[5].

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

Cell Viability Assay[3].

Cell Line:	Human prostate cancer cell DU145
Concentration:	6-12 %
Incubation Time:	5 days
Result:	Supported more cell growth than pure non-woven fabric (NWF) scaffolds

Cell Viability Assay[5].

Cell Line:	Human keratinocyte-derived (HaCaT) cells

Concentration:	0-200 μg/mL
Incubation Time:	24 h
Result:	Increased cell growth percentage in the concentration range of 25-75 μg/mL, but decreased cell growth percentage in the concentration range of 100-200 μg/mL.

In Vivo

Gelatins (20 μg/kg; i.p.) has a good improvement effect on exercise recovery of spinal cord injury in Wistar rats by forming Au NPs/Gelatin nanocomposite[1].
Gelatins has excellent hemostatic effects on rat femoral artery injury after crosslinking with biocompatible dialdehyde starch (DAS) to synthesize aminated gelatin sponge[2].
Gelatins (10 mg/kg; once every two days; 14 days; i.v.) is modified with PEG to form a pH/enzyme responsive complex, which specifically delivers doxorubicin (DOX) (HY-15142A) and exhibits anti-tumor activity in S180 ectopic tumor mice[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Traumatic spinal cord injury Wistar rat model[1].
Dosage:	20 μg/kg Au NPs/Gelatin nanocomposite
Administration:	Intraperitoneal injection (i.p.)
Result:	Improved hind limb function, reduced cavity area, increased the number of ventral motor neurons, and demonstrated higher BBB scores and lower delayed responses in sensory tests.

Animal Model:	SD female rat femoral injury model[2].
Dosage:	A pre-weighed hemostatic sponge
Administration:	Apply to the wound
Result:	Reduced hemostasis time and blood loss.

Animal Model:	Female ICR mouse model of ectopic transplantation of mouse sarcoma cell line S180[4].
Dosage:	10 mg DOX/kg
Administration:	Intravenous injection (i.v.); once every two days; 14 days
Result:	Reduced tumor volume, prevented tumor cell spread, and lowered cardiac toxicity.

REFERENCES

[1]. Zhaofeng Shi, et al. Biosynthesis of gold nanoparticles by using gelatin as reducing and stabilizing agent under ultrasound irradiation: Application of its catalytic activity and for ameliorating motor recovery after spinal cord injury in the Wistar rat's model. Inorganic Chemistry Communications. 2024 Sep;167: 112833.

[2]. Yu-He Zhu, et al. Dialdehyde starch cross-linked aminated gelatin sponges with excellent hemostatic performance and biocompatibility. Carbohydrate Polymers. 2024 Oct;342:122326.

[3]. Fu J, et al. Lyophilized Gelatin@non-Woven Scaffold to Promote Spheroids Formation and Enrich Cancer Stem Cell Incidence. Nanomaterials (Basel). 2022 Feb 28;12(5):808.

[4]. Dong L, et al. A pH/enzyme-responsive tumor-specific delivery system for doxorubicin. Biomaterials. 2010 Aug;31(24):6309-16.

[5]. Huang CY, et al. Enhancement of Cell Adhesion, Cell Growth, Wound Healing, and Oxidative Protection by Gelatins Extracted from Extrusion-Pretreated Tilapia (Oreochromis sp.) Fish Scale. Molecules. 2018 Sep 20;23(10):2406.

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