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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
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Fluorene

Cat. No.: HY-W026772

CAS No.: 86-73-7

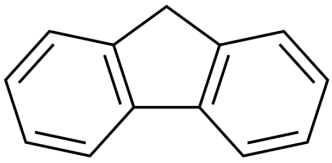
Molecular Formula: $C_{13}H_{10}$

Molecular Weight: 166.22

Target: Fluorescent Dye; Reactive Oxygen Species; TNF Receptor; Interleukin Related; SOD

Pathway: Others; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Apoptosis

Storage: RT, protect from light
In solvent -80°C 2 years
-20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 62.5 mg/mL (376.00 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	6.0160 mL	30.0801 mL	60.1601 mL
	5 mM	1.2032 mL	6.0160 mL	12.0320 mL
	10 mM	0.6016 mL	3.0080 mL	6.0160 mL

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

BIOLOGICAL ACTIVITY

Description

Fluorene is an orally active polycyclic aromatic hydrocarbon (PAH) and a precursor to other fluorene-based compounds. Fluorene and its derivatives serve as dye precursors for fluorene synthesis. In A549 cells, Fluorene induces oxidative stress and inflammatory responses by increasing ROS and SOD generation, exacerbating lipid peroxidation, modulating antioxidant enzyme activity, and upregulating the expression of pro-inflammatory factors TNF-α and IL-6. In vivo, Fluorene exhibits anxiolytic activity. Fluorene holds potential for research in inflammation and neurological disorders[1][2][3].

In Vitro

Fluorene (200-800 μM, 24-48 hours) induces oxidative stress and inflammation in A549 cells, characterized by increased ROS generation, enhanced lipid peroxidation, altered antioxidant enzyme activity, and upregulated TNF-α and IL-6 expression[2].

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

Western Blot Analysis[1]

Cell Line:	A549 human lung epithelial cells (lung injury)
Concentration:	200, 400, 600, 800 μM
Incubation Time:	24 hours, 48 hours

Result:	Upregulated TNF-α and IL-6 mRNA and protein expression levels. Additionally, SP-A expression increased in Fluorene-treated groups (400 and 600 μM) but decreased in the PAH mixture-treated group (600 μM).

Cell Viability Assay[1]

Cell Line:	A549 human lung epithelial cells (lung injury)
Concentration:	200, 400, 600, 800 μM
Incubation Time:	24 hours, 48 hours
Result:	Induced ROS generation in A549 cells, increased MDA content, and enhanced SOD and CAT activity.

In Vivo

Fluorene (100 mg/kg, p.o. or i.p., once daily for 60 days) decreases weight gain and increases relative liver weight in Wistar rats, with the i.p. route resulting in higher blood and brain levels of Fluorene and its metabolites[3].
Fluorene (1, 10 mg/kg/day, p.o. or i.p., once daily for 60 days) reduces anxiety levels in Wistar rats without affecting locomotor activity or learning ability[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Fluorene oral or intraperitoneal (i.p.) administration-induced body weight and organ changes in Wistar rats[1]
Dosage:	1, 10, 100 mg/kg
Administration:	Oral gavage (p.o.) or intraperitoneal injection (i.p.), once daily for 60 days
Result:	Exhibited significantly reduced weight gain after 28 days and increased relative liver weight (The 100 mg/kg group). Additionally, higher concentrations of Fluorene and its hydroxylated metabolites were detected in the blood and brain of i.p.-treated rats compared to p.o.-treated ones. Reduced anxiety levels in rats (1, 10 mg/kg), while the high dose (100 mg/kg) showed no significant changes. No effects on locomotor activity or learning ability were observed.

CUSTOMER VALIDATION

- Molecules. 2022 May 13;27(10):3133.

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REFERENCES

[1]. Guo H, et al. Oxidative stress and inflammatory effects in human lung epithelial A549 cells induced by phenanthrene, fluorene, and their binary mixture. Environ Toxicol. 2021 Jan;36(1):95-104.

[2]. Peiffer J, et al. Behavioral toxicity and physiological changes from repeated exposure to fluorene administered orally or intraperitoneally to adult male Wistar rats: A dose–response study[J]. Neurotoxicology, 2016, 53: 321-333.

[3]. Paul Olusegun Bankole, et al. Biodegradation of fluorene by the newly isolated marine-derived fungus, Mucor irregularis strain bpo1 using response surface methodology. Ecotoxicol Environ Saf. 2021 Jan 15;208:111619.

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

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