Data Sheet (Cat.No.T6985)

TargetMol

Benzo[a]pyrene

Chemical Properties

CAS No. : 50-32-8

Formula: C20H12

Molecular Weight: 252.31

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Benzo[a]pyrene (3,4-Benzopyrene) exhibits lung carcinogenicity in animal models and is commonly used for lung cancer modeling and chemoprevention research.
Targets(IC50)	Others
In vivo	lung tumorigenesis induced by Benzo[a]pyrene(B[a]P) was dose dependent in female A/J mice.?The incidence of hyperplasia values in females treated with 0.25, 0.50, and 1.0 mg B[a]P were significantly higher than in the vehicle-treated group.?The incidence of adenoma in females receiving 1.0 mg B[a]P was significantly higher than in the vehicle group.?The multiplicity of hyperplasia in females receiving 0.50 or 1.0 mg B[a]P was significantly higher than in the vehicle group.?The multiplicity of adenoma in the group treated with 1.0 mg was also significantly higher than in the vehicle group.?The incidences of hyperplasia and adenoma in female A/J mice were significantly increased by B[a]P in a dose-dependent manner.?Proliferative lesions in the lungs were classified as bronchiolar-alveolar hyperplasia or adenoma, and no malignant neoplasms (adenocarcinoma) were observed[1].
Animal Research	After a 1- or 2-week acclimatization period, 360 adult male A/J mice and 520 adult female A/J mice were used for the experiment.?Mice were allocated, using a body weight-based randomization process, to a total of 22 groups.?Briefly, each animal received a single intraperitoneal administration of one of the initiators, at one of the indicated doses, on day 1.?The animals were observed daily for clinical signs and mortality, and body weights were measured weekly.?Following an overnight fast at 26 weeks after dosing, all mice were anesthetized with sevoflurane and weighed.?They were then sacrificed by exsanguination from the abdominal aorta and caudal vena cava and subjected to necropsy[1].

Solubility Information

Solubility	DMSO: 9.09 mg/mL (36.03 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 1 mg/mL (3.96 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one.*

In vivo Formulation	*Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.9634 mL	19.8169 mL	39.6338 mL
5 mM	0.7927 mL	3.9634 mL	7.9268 mL
10 mM	0.3963 mL	1.9817 mL	3.9634 mL
50 mM	0.0793 mL	0.3963 mL	0.7927 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Saeko Onami,Chigusa Okubo, Asuka Iwanaga,et al.Dosimetry for lung tumorigenesis induced by urethane, 4-(N-methyl-N-nitrosamino)-1-(3-pyridyl)-1-butanone (NNK), and benzo[a]pyrene (B[a]P) in A/JJmsSlc mice[J].J Toxicol Pathol. 2017 Jul; 30(3): 209-216.

Bao Z, Wang J, He M, et al. Benzo [a] pyrene inhibits myoblast differentiation through downregulating the Hsp70-K2-p38MAPK complex. Toxicology in Vitro. 2022: 105356

Yeo C D , Kim Y A , Lee H Y , et al. Roflumilast treatment inhibits lung carcinogenesis in benzo(a)pyrene-induced murine lung cancer model[J]. European Journal of Pharmacology, 2017:S0014299917304508.