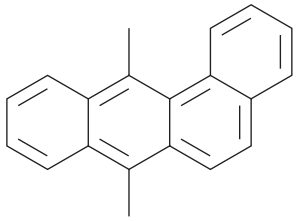
PRODUCT INFORMATION

7,12-Dimethylbenz[a]anthracene

Item No. 30383

CAS Registry No.: 57-97-6
Synonym: DMBA
MF: $C_{20}H_{16}$
FW: 256.3
Purity: ≥98%
UV/Vis.: λ_{max}: 212, 222, 264, 275, 285, 296 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

7,12-Dimethylbenz[a]anthracene (DMBA) is supplied as a crystalline solid. A stock solution may be made by dissolving the DMBA in the solvent of choice, which should be purged with an inert gas. DMBA is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of DMBA in these solvents is approximately 10 and 20 mg/ml, respectively.

Description

7,12-Dimethylbenz[a]anthracene (DMBA) is a polycyclic aromatic hydrocarbon (PAH) that has been found in tobacco smoke and diesel exhaust and has carcinogenic activity.[1,2] It undergoes metabolic activation by numerous enzymes, including the cytochrome P450 (CYP450) isoform CYP1B1, as well as microsomal epoxide hydrolase (mEH), producing a variety of reactive metabolites that form DNA adducts *in vivo*, and it has been commonly used to induce tumor formation in various rodent models.[1-3] DMBA increases proliferation and migration of, and induces epithelial-to-mesenchymal transition (EMT) in, MCF-10A breast cancer cells when used at a concentration of 5 µM.[4] It also has immunosuppressant activity, inhibiting proliferation of isolated mouse splenic B- and T cells stimulated *ex vivo* with LPS or concanavalin A (Item No. 14951), respectively, when administered at doses of 50 and 100 mg/kg.[5] Intragastric administration of DMBA (20 mg/animal) induces formation of mammary gland tumors in rats.[6] DMBA (50 µg/animal), in combination with phorbol 12-myristate 13-acetate (TPA; Item No. 10008014), initiates papilloma formation in a rat two-stage model of skin carcinogenesis.[7]

References

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