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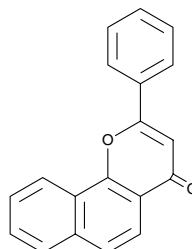
Product Information



α -Naphthoflavone

Item No. 16924

CAS Registry No.: 604-59-1
Formal Name: 2-phenyl-4H-naphtho[1,2-b]pyran-4-one
Synonyms: 7,8-Benzoflavone, NSC 407011
MF: C₁₉H₁₂O₂
FW: 272.3
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max} : 225, 280, 344 nm



Laboratory Procedures

For long term storage, we suggest that α -naphthoflavone be stored as supplied at -20°C. It should be stable for at least two years.

α -Naphthoflavone is supplied as a crystalline solid. A stock solution may be made by dissolving the α -naphthoflavone in the solvent of choice. α -Naphthoflavone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of α -naphthoflavone in these solvents is approximately 1, 10, and 20 mg/ml, respectively.

α -Naphthoflavone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, α -naphthoflavone should first be dissolved in DMF and then diluted with the aqueous buffer of choice. α -Naphthoflavone has a solubility of approximately 0.1 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

The aryl hydrocarbon receptor (AhR) is a ligand-activated transcription factor that promotes the expression of phase I and II xenobiotic chemical metabolizing enzyme genes, including the cytochrome P450 (CYP) isoforms CYP1A1 and CYP1A2.¹ α -Naphthoflavone is a flavone that modulates xenobiotic metabolism at several points. It antagonizes AhR, blocking the expression of phase I and II genes at nanomolar concentrations, although it can agonize AhR at higher concentrations (10 μ M).^{2,3} α -Naphthoflavone inhibits CYP19 (aromatase), CYP1A1, CYP1A2, and CYP1B1 (IC₅₀s = 500, 60, 6, and 5 nM, respectively), whereas it activates CYP3A4 (K_d = 7.4 μ M).⁴⁻⁶ Dietary α -naphthoflavone can contribute to carcinogenesis in the presence of synthetic estrogens.⁷

References

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