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ProductInformation

Flutamide

Product Number **F 9397**
Store at Room Temperature

Product Description

Molecular Formula: $C_{11}H_{11}F_3N_2O_3$
Molecular Weight: 276.2
CAS Number: 13311-84-7
Synonyms: 2-methyl-N-[4-nitro-3-(trifluoromethyl)phenyl]propanamide; α,α,α-trifluoro-2-methyl-4'-nitro-*m*-propionotoluidide; 4'-nitro-3'-trifluoromethylisobutyranilide[1]

The non-steroidal compound flutamide is used in endocrinology research. It has been reported to possess anti-androgenic properties and to act in tissue via inhibition of androgen uptake and binding. The principal metabolite of flutamide is 2-hydroxyflutamide, which is also an anti-androgenic compound. Both compounds bind readily to plasma proteins.[2]

Flutamide has been utilized in a study of mammary epithelial growth and differentiation in the mouse HC11 cell line to block the actions of various androgens on the cultured cells, at a concentration of 3 μM.[3] Flutamide (100 nM) was shown to abolish the inhibitory effect of testosterone on DNA synthesis in cultured male human umbilical vein cells.[4]

The formation of a water-soluble complex of flutamide with hydroxypropyl-β-cyclodextrin and its uptake into Caco-2 cells has been studied.[5] An HPLC method for flutamide that includes an investigation of the stability of this product is both the solid and solution states has been published.[6]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in ethanol (50 mg/ml), with heat as needed, yielding a clear to hazy, yellow to yellow-green solution. It is also soluble in acetone, ethyl acetate, methanol, chloroform, and ether.[2]

Storage/Stability

A study of flutamide in aqueous solution has indicated that over a period of 12 days, the compound degraded at ambient or high temperature (22 °C, 37 °C) and acidic pH conditions (pH 1.1). Inclusion of sodium chloride prevents the breakdown of flutamide in aqueous solution.[6]

References

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3. Baratta, M., et al., Role of androgens in proliferation and differentiation of mouse mammary epithelial cell line HC11. J. Endocrinol., **167(1)**, 53-60 (2000).
4. Ling, S., et al., Testosterone (T) enhances apoptosis-related damage in human vascular endothelial cells. Endocrinology, **143(3)**, 1119-1125 (2002).
5. Zuo, Z., et al., Flutamide-hydroxypropy-β-cyclodextrin complex: formulation, physical characterization, and absorption studies using the Caco-2 *in vitro* model. J. Pharm. Pharm. Sci., **3(2)**, 220-227 (2000).
6. Miranda, A., et al., Stability study of flutamide in solid state and in aqueous solution. Drug Dev. Ind. Pharm., **28(4)**, 413-422 (2002).

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