Natural Products

ChemFaces

3-Butylidenephthalidee Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: 3-Butylidenephthalide

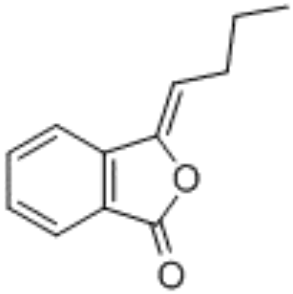
Catalog No.: CFN99588

Cas No.: 551-08-6

Purity: >=98%

M.F: $C_{12}H_{12}O_2$

M.W: 188.22



Physical Description: Oil

Synonyms: 3-Butylidene-1(3H)-Isobenzofuranone;Butylidenephthalide.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Synthetic precursor compounds;
4. Intermediates & Fine Chemicals;
5. Aromatics;
6. Others.

[Source]

The roots of *Ligusticum chuanxiong hort.*

[Biological Activity or Inhibitors]

Butylidenephthalide (BDPH) is one of the most potent vasorelaxants isolated from *Ligusticum chuanxiong Hort*, BDPH-mediated vasorelaxation comprises both endothelium-dependent (NO) and independent components, suggests that BDPH acting through an inhibitory mechanism downstream to l-type voltage-operated and prostanoid TP receptor-operated Ca2+ channels operating late in the contractile pathway.[1]

3-(Z)-butylidenephthalide shows antihyperglycemic activity, its antihyperglycemic effect is due to inhibition of α-glucosidase at the intestinal level,it inhibits the activity of yeast-α-glucosidase (IC(50) 2.35 mM) in a noncompetitive fashion with a K(i) of 4.86 mM.[2]

(E)- and (Z)-Butylidenephthalide have insecticidal and acaricidal activities, they exhibits 50% lethal concentration (LC50) values of 2.07 and 0.94 micromol/ml of diet concentration against larvae of D. melanogaster, respectively. [3]

Butylidenephthalide inhibits, in a dose-dependent manner, the aggregation and release reaction of washed rabbit platelets induced by collagen and arachidonic acid, the antiplatelet effect of butylidenephthalide is mainly due to an inhibitory effect on cyclo-oxygenase and may be due partly to interference with calcium mobilization.[4]

Butylidenephthalide significantly enhances tension in isolated guinea-pig trachea. In this study, it may be similar to 4-AP, a blocker of Kv1 family of K^+ channels, to enhance the baseline tension of guinea-pig trachea.[5]

Butylidenephthalide , an antispasmodic compound , it has a selective anti-anginal effect without changing blood pressure, it inhibits calcium release from calcium stores more selectively than calcium influx from extracellular space via voltage-dependent calcium channels, the inhibition by it of calcium release from KCl-sensitive calcium stores may be similar to its inhibition of calcium release from phenylephrine-sensitive calcium stores. [6]

[Solvent]

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

[HPLC Method][7]

Mobile phase: Methanol - H2O, gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 270 nm.

[Storage]

2-8℃, Protected from air and light, refrigerate or freeze.

[References]

[1] Chan S K, Choi O K, Jones R L, *et al. Eur. J. Pharmacol., 2006, 537(1–3):111-7.*

[2] Brindis F, Rodríguez R, Bye R,*et al. J. Nat. Prod., 2011, 74(3):314-20.*

[3] Tsukamoto T, Nakatani S Y, Sakai N, *et al. Biol. Pharmaceut. Bull., 2006, 29(3):592-4.*

[4] Teng C M, Chen W Y, Wun-Chang K O, *et al. B.B.A.-Gen.Subjects, 1987, 924(3):375-82.*

[5] Hsin-Te Hsu, Yang Y L, Chen W C, *et al. Biomed. Res. Int., 2014, 2014(3):1153-66.*

[6] Ko W C, Charng C Y, Sheu J R, *et al. J. Pharm. Pharmacol., 1998, 50(12):1365-9.*

[7] Li H X, Ding M Y, Yu J Y. *J. Chromatogr. Sci., 2002, 40(3):156-61.*

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