



## 3-n-Butylphthalide Datasheet

4<sup>th</sup> Edition (Revised in July, 2016)

### [ Product Information ]

**Name:** 3-n-Butylphthalide

**Catalog No.:** CFN90235

**Cas No.:** 6066-49-5

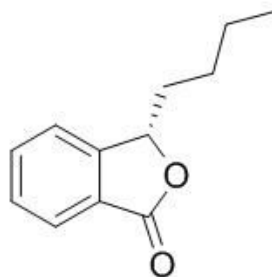
**Purity:** > 98%

**M.F:** C<sub>12</sub>H<sub>14</sub>O<sub>2</sub>

**M.W:** 190.24

**Physical Description:** Oil

**Synonyms:** Butylphthalide; 3-Butylphthalide; 3-butyl-phthalid; n-Butylphthalide; 3-butyl-1(3H)-isobenzofuranone.



### [ Intended Use ]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Cosmetic research;
5. Synthetic precursor compounds;
6. Spice flavor;
7. Intermediates & Fine Chemicals;
8. Ingredient in supplements;
9. Aromatics;
10. Others.

## **[ Source ]**

The root of *Angelica acutilobac* (Sieb. et Zucc.) Kitag.

## **[ Biological Activity or Inhibitors]**

DI-3-n-Butylphthalide(NBP), an established natural antioxidant for clinical stroke treatment in China, can reportedly reduce beta-amyloid-induced neuronal toxicity in cultured neuronal cells, and attenuate neurodegenerative changes in aged rats; it can upregulate the vesicular monoamine transporter 2 gene expression in vitro and in vivo; it protects dopaminergic (DA) neurons likely by reducing oxidative stress, offering an alternative neuroprotective medication for Parkinson's disease.<sup>[1]</sup>

3-n-Butylphthalide may have a protective effect for diabetic brain damage through enhancing VEGF expression to inhibit caspase-3 mediated apoptosis.<sup>[2]</sup>

3-n-Butylphthalide is a potentially beneficial drug for the treatment of ischemic stroke with multiple actions on different pathophysiological processes, NBP exerts oral anti-platelet and anti-thrombotic efficacy without perturbing systemic hemostasis in rats, and l-NBP is more potent than d- and dl-NBP as antiplatelet agent.<sup>[3]</sup>

L-Butylphthalide may protect neurons against Abeta-induced neurotoxicity via inhibiting tau protein hyperphosphorylation.<sup>[4]</sup>

3-n-Butylphthalide, especially its s-(-)-enantiomer, can potently reduce the release of cytochrome c, decrease the activation of caspase-3, and inhibit DNA fragmentation after transient focal cerebral ischemia; the beneficial effects of NBP on cerebral ischemia-induced apoptosis might have important implications for the study and treatment of ischemic cerebrovascular diseases.<sup>[5]</sup>

## **[ Solvent ]**

Chloroform, Dichloromethane, DMSO, Acetone.

## **[ HPLC Method ]<sup>[6]</sup>**

Mobile phase: 0.2 M Sodium Dihydrogen Phosphate ( pH 4.5 )- Acetonitrile=50:50;

Flow rate: 1.0 ml/min;

Column temperature: 30 °C;

The wave length of determination: 228 nm.

## **[ Storage ]**

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

## **[ References ]**

[1] Xiong N, Huang J, Chen C, *et al. Neurobiol. Aging*, 2012, 33(8):1777–91.

[2] Zhang T, Jia W, Sun X. *Neurol. Res.*, 2013, 32(4):390-6.

[3] Peng Y, Zeng X, Feng Y, *et al. J. Cardiovasc Pharm.*, 2004, 43(6):876-81.

[4] Peng Y, Xing C, Lemere C A, *et al. Neurosci. Lett.*, 2008, 434(2):224-9.

[5] Chang Q. *Acta Pharmacol. Sin.*, 2003, 24(8):796-804.

[6] Wang Q, Li S, Liu P, *et al. Journal of Applied Pharmaceutical Science*, 2012,2(10): 16-20.

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