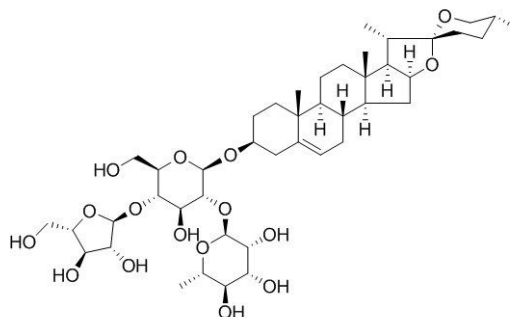


## Polyphyllin D Datasheet

4<sup>th</sup> Edition (Revised in July, 2016)**[ Product Information ]****Name:** Polyphyllin D**Catalog No.:** CFN90255**Cas No.:** 50773-41-6**Purity:** > 98%**M.F:** C<sub>44</sub>H<sub>70</sub>O<sub>16</sub>**M.W:** 855.02**Physical Description:** Yellow powder**Synonyms:** 1,3,6-Trihydroxy-7-methoxy-2,8-bis(3-methylbut-2-enyl)-9-xanthenone.**[ Intended Use ]**

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

**[ Source ]**The roots of *Polygonatum polyphylla*.**[ Biological Activity or Inhibitors ]**

Polyphyllin D (PD), isolated from a traditional medicinal herb Paris polyphylla, it is a potent anticancer agent, it can overcome drug resistance in R-HepG2 cells and elicit programmed cell death via mitochondrial dysfunction; it induces apoptosis in human erythrocytes through Ca<sup>2+</sup> rise and membrane permeabilization.<sup>[1,2]</sup>

Polyphyllin D induces the cytotoxic effect through a mechanism initiated by ER stress followed by mitochondrial apoptotic pathway, the ability of activating two major pathways of apoptosis makes PD an attractive drug lead for anticancer therapeutics.<sup>[3]</sup>

Polyphyllin D elicits apoptosis through mitochondria dysfunction, daily administration of P D (2.73 mg/kg body weight) through intravenous injection for ten days in nude mice bearing MCF-7 cells can effectively reduce tumor growth for 50% in terms of tumor weight and size, give no significant toxicity in heart and liver to the host, suggests that it can serve as a candidate in breast cancer treatment.<sup>[4]</sup>

Polyphyllin D has anti-angiogenic effects, it can inhibit endothelial cell functions in vitro and angiogenesis in zebrafish embryos in vivo, the anti-angiogenic effects of PD have been explored in the study which implied a potential therapeutic development of PD in cancer treatment. <sup>[5]</sup>

Polyphyllin D induces apoptosis in U87 human glioma cells through the c-Jun NH<sub>2</sub>-terminal kinase pathway.<sup>[6]</sup>

## **[ Solvent ]**

Pyridine, Methanol, Ethanol, Hot water, etc.

## **[ HPLC Method ]<sup>[7]</sup>**

Mobile phase: Acetonitrile- H<sub>2</sub>O, gradient elution;

Flow rate: 1.0 ml/min;

Column temperature: 25 °C;

The wave length of determination: 203 nm.

## **[ Storage ]**

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

## **[ References ]**

- [1] Cheung Y N, Ong C Y, Suen Y K, *et al. Cancer Lett.*, 2005, 217(2):203-11.
- [2] Gao M, Cheung K L, Lau I P, *et al. Arch.Toxicol.*, 2012, 86(5):741-52.
- [3] Siu F M, Ma D L, Cheung Y W, *et al. Proteomics*, 2008, 8(15):3105-17.
- [4] Lee M, Yuet-Wa J S, Yu B, *et al. Cancer Biol. Ther.*, 2005, 4(11):1248-54.
- [5] Chan Y W, Koon C M, Liu X, *et al. J. Ethnopharmacol.*, 2011, 137(1):64-9.
- [6] Yu Q, Li Q, Lu P, *et al. J. Med. Food*, 2014, 17(9):1036-42.
- [7] Chen X. *Chinese Journal of Modern Applied Pharmacy*, 2013(12):1346-9.

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