# Phenylbutazone

**Cat. No.:** HY-B0230

**CAS No.:** 50-33-9

**Molecular Formula:** $C_{19}H_{20}N_2O_2$

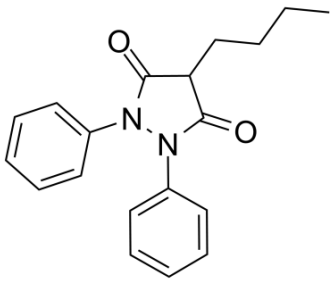
**Molecular Weight:** 308.37

**Target:** COX

**Pathway:** Immunology/Inflammation

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 6 months |
| | -20°C | 1 month |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 100 mg/mL (324.29 mM)

$H_2O$ : 0.67 mg/mL (2.17 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 3.2429 mL | 16.2143 mL | 32.4286 mL |
| 5 mM | 0.6486 mL | 3.2429 mL | 6.4857 mL |
| 10 mM | 0.3243 mL | 1.6214 mL | 3.2429 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.11 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.11 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Phenylbutazone is an efficient reducing cofactor for the peroxidase activity of prostaglandin H synthase (PHS). Phenylbutazone, a hepatotoxin, is a nonsteroidal anti-inflammatory drug (NSAID). Phenylbutazone induces muscle blind-like protein 1 (MBNL1) expression and has the potential for ankylosing spondylitis research[1][2].

**In Vitro**

Phenylbutazone has low inhibition of COX-1 and COX-2[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## REFERENCES

[1]. Beretta C, et al. COX-1 and COX-2 inhibition in horse blood by phenylbutazone, flunixin, carprofen and meloxicam: an in vitro analysis. Pharmacol Res. 2005 Oct;52(4):302-6.

[2]. G A Reed, et al. Inactivation of prostaglandin H synthase and prostacyclin synthase by phenylbutazone. Requirement for peroxidative metabolism. Mol Pharmacol. 1985 Jan;27(1):109-14.

[3]. Guiying Chen, et al. Phenylbutazone induces expression of MBNL1 and suppresses formation of MBNL1-CUG RNA foci in a mouse model of myotonic dystrophy. Sci Rep. 2016 Apr 29;6:25317.



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