# 5-Hydroxymethylfurfural

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|---|---|
| **Cat. No.:** | HY-Y0051 |
| **CAS No.:** | 67-47-0 |
| **Molecular Formula:** | $C_6H_6O_3$ |
| **Molecular Weight:** | 126.11 |
| **Target:** | Fungal |
| **Pathway:** | Anti-infection |
| **Storage:** | Pure form    -20°C    3 years |
| | In solvent    -80°C    6 months |
| |                         -20°C    1 month |
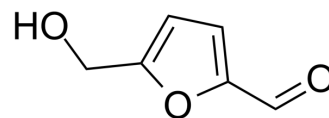
## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 50 mg/mL (396.48 mM)

* "≥" means soluble, but saturation unknown.

| Preparing Stock Solutions | Mass / Solvent Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 7.9296 mL | 39.6479 mL | 79.2959 mL |
| | 5 mM | 1.5859 mL | 7.9296 mL | 15.8592 mL |
| | 10 mM | 0.7930 mL | 3.9648 mL | 7.9296 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 (19.82 mM); Clear solution

2. Add each solvent one by one:  10% DMSO  >>  90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (19.82 mM); Clear solution

3. Add each solvent one by one:  10% DMSO  >>  90% corn oil
   Solubility: ≥ 2.5 mg/mL (19.82 mM); Clear solution

## BIOLOGICAL ACTIVITY

| **Description** | 5-Hydroxymethylfurfural (2-Hydroxymethyl-5-furfural), derived from Cornus officinalis, inhibits yeast growth and fermentation as stressors. |
|---|---|
| **IC$_{50}$ & Target** | Yeast[1]. |
| **In Vitro** | It is found that furfural and HMF cause the attenuation of bulk translation activity and the assembly of cytoplasmic mRNP granules in Saccharomyces cerevisiae. Notably, a combination of furfural and HMF induce the remarkable repression of |

translation initiation and SG formation. Furfural and HMF can induce the formation of cytoplasmic mRNP granules, HMF also causes a gradual reduction in the polysome fraction and a concomitant increase in the 80S monosome fraction[1].

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

## CUSTOMER VALIDATION

- Research Square Preprint. 2021 Aug.

See more customer validations on www.MedChemExpress.com

## REFERENCES

[1]. Iwaki A, et al. Biomass conversion inhibitors furfural and 5-hydroxymethylfurfural induce formation of messenger RNP granules and attenuate translation activity in Saccharomyces cerevisiae. Appl Environ Microbiol. 2013 Mar;79(5):1661-7.