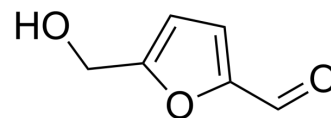


5-Hydroxymethylfurfural

Cat. No.:	HY-Y0051	
CAS No.:	67-47-0	
Molecular Formula:	C ₆ H ₆ O 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.

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	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

- 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
- 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
- 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.

IC₅₀ & 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.

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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.

Caution: Product has not been fully validated for medical applications. For research use only.

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