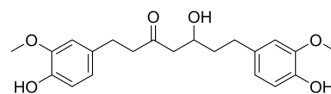


Hexahydrocurcumin

| | |
|---------------------------|--|
| Cat. No.: | HY-N0929 |
| CAS No.: | 36062-05-2 |
| Molecular Formula: | C ₂₁ H ₂₆ O ₆ |
| Molecular Weight: | 374.43 |
| Target: | COX; Reactive Oxygen Species |
| Pathway: | Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB |
| Storage: | Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year |



SOLVENT & SOLUBILITY

| | | | | |
|-----------------|--|--------------------------|-----------|------------|
| In Vitro | DMSO : 100 mg/mL (267.07 mM; Need ultrasonic) | | | |
| | | Solvent Concentration | Mass | |
| | | | 1 mg | 5 mg |
| | Preparing Stock Solutions | 1 mM | 2.6707 mL | 13.3536 mL |
| | 5 mM | 0.5341 mL | 2.6707 mL | |
| | 10 mM | 0.2671 mL | 1.3354 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 (6.68 mM); Clear solution 2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (6.68 mM); Clear solution 3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (6.68 mM); Clear solution | | | |

BIOLOGICAL ACTIVITY

| | |
|-------------------------------------|---|
| Description | Hexahydrocurcumin is one of the major metabolites of curcumin and a selective, orally active COX-2 inhibitor. Hexahydrocurcumin is inactive against COX-1. Hexahydrocurcumin has antioxidant, anticancer and anti-inflammatory activities ^{[1][2]} . |
| IC₅₀ & Target | COX-2 |
| In Vitro | Hexahydrocurcumin (0-25 μM; 24-48 hours; HT-29 cells) treatment significantly decreased the viability of HT-29 colon cancer |

cells in a time- and concentration-dependent. The respective IC₅₀ values for 24 and 48 h of Hexahydrocurcumin exposure are 77.05 and 56.95, respectively^[1].

Hexahydrocurcumin (0-25 μM; 24-48 hours; HT-29 cells) combined with 5-fluorouracil (5-FU; 5 μM) markedly reduces the COX-2 expression. The level of COX-1 is not altered^[1].

Hexahydrocurcumin (0-25 μM; 24-48 hours; HT-29 cells) combined with 5-fluorouracil (5-FU; 5 μM) markedly reduces the COX-2 protein. The level of COX-1 protein is not altered^[1].

Hexahydrocurcumin (7-14 μM; 24 hours) attenuates lipopolysaccharide (LPS)-elicited increase of prostaglandin E₂ (PGE₂) in murine macrophages (RAW 264.7) in a concentration-dependent manner^[2].

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

Cell Viability Assay^[1]

| | |
|------------------|--|
| Cell Line: | HT-29 cells |
| Concentration: | 0 μM, 5 μM, 10 μM, 25 μM |
| Incubation Time: | 24 hours or 48 hours |
| Result: | Significantly decreased the viability of HT-29 colon cancer cells. |

RT-PCR^[1]

| | |
|------------------|--|
| Cell Line: | HT-29 cells |
| Concentration: | 25 μM |
| Incubation Time: | 24 hours |
| Result: | Combined with 5-fluorouracil (5-FU; 5 μM) markedly reduced the COX-2 expression. |

Western Blot Analysis^[1]

| | |
|------------------|---|
| Cell Line: | HT-29 cells |
| Concentration: | 25 μM |
| Incubation Time: | 24 hours |
| Result: | Combined with 5-fluorouracil (5-FU; 5 μM) markedly reduced the COX-2 protein. |

In Vivo

Hexahydrocurcumin (50 mg/kg; oral administration; daily; for 16 weeks; male Wistar rats) treatment significantly reduces the numbers of aberrant crypt foci (ACF) in colon cancer rats. Hexahydrocurcumin also markedly decreases COX-2 protein expression. The levels of COX-1 protein is not different from normal rats^[3].

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

| | |
|-----------------|--|
| Animal Model: | Male Wistar rats (100-120 g) injected with dimethylhydrazine (DMH) ^[3] |
| Dosage: | 50 mg/kg |
| Administration: | Oral administration; daily; for 16 weeks |
| Result: | Significantly reduced the numbers of ACF in colon cancer rats. Also markedly decreased COX-2 protein expression. |

REFERENCES

[1]. Srimuangwong K, et al. Hexahydrocurcumin enhances inhibitory effect of 5-fluorouracil on HT-29 human colon cancer cells. World J Gastroenterol. 2012 May 21;18(19):2383-9.

[2]. Li F, et al. In vitro antioxidant and anti-inflammatory activities of 1-dehydro-[6]-gingerdione, 6-shogaol, 6-dehydroshogaol and hexahydrocurcumin. Food Chem. 2012 Nov 15;135(2):332-7.

[3]. Srimuangwong K, et al. Effects of hexahydrocurcumin in combination with 5-fluorouracil on dimethylhydrazine-induced colon cancer in rats. World J Gastroenterol. 2012 Dec 21;18(47):6951-9.

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

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