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# 产品名称：20-羟基二十碳-5Z,8Z,11Z,14Z-四烯酸
# 产品别名：20-HETE；20-hydroxy Arachidonic Acid；20-羟花生四烯酸

## 生物活性：

**Description**

20-HETE(20-hydroxy Arachidonic Acid) is a potent vasoconstrictor produced in vascular smooth muscle (VSM) cells. It depolarizes VSM by blocking the open-state probability of Ca2+-activated K+-channels. IC50 Value: Target: 20-Hydroxyeicosatetraenoic acid (20-HETE) is a cytochrome P450-derived arachidonic acid metabolite that has been shown to increase smooth muscle contractions and proliferation, stimulate endothelial dysfunction and activation and promote hypertension. in vitro: Addition of 20-HETE to the bath (1-100 nM), reduced the frequency of opening of the large-conductance Ca(2+)-activated K+ channel recorded using cell-attached patches on VSM [1]. In kidney, 20-HETE induces diuresis by inhibiting Na+-K+-ATPase in proximal tubules and Na+/K+/Cl+ cotransporter in the thick ascending limb of Henle's loop [2]. in vivo: In Cyp4a14(-/-) mice, which display androgen-driven and 20-HETE-dependent hypertension, treatment with20-HETE antagonist abolished remodeling of renal resistance arteries measured as media thickness (24±1 vs. 15±1μm) and M/L (0.29±0.03 vs. 0.17±0.01) [4]. The transgenic mice had overexpressed hepatic CYP4F2, high hepatic 20-HETE and fasting plasma glucose levels but normal insulin level. The GP activity was increased and the cAMP/PKA-PhK-GP pathway was activated in the transgenic mice compared with wild-type mice [5]. Clinical trial: Mechanisms of Response to Diesel Exhaust in Subjects With Asthma. Phase not specified

**$IC_{50}$ & Target**

Human Endogenous Metabolite

**Solvent&Solubility**

***In Vitro:***

**Ethanol : 6.67 mg/mL (20.81 mM;** Need ultrasonic)

**DMSO : ≥ 3.2 mg/mL (9.99 mM)**

* "≥" means soluble, but saturation unknown.

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 3.1204 mL | 15.6021 mL | 31.2042 mL |
| | 5 mM | 0.6241 mL | 3.1204 mL | 6.2408 mL |
| | 10 mM | 0.3120 mL | 1.5602 mL | 3.1204 mL |

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month (protect from light, stored under argon)。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

**References**

[1]. Zou AP, Fleming JT, Falck JR, 20-HETE is an endogenous inhibitor of the large-conductance Ca(2+)-activated K+ channel in renal arterioles. Am J Physiol. 1996 Jan;270(1 Pt 2):R228-37.

[2]. Schwartzman M, Ferreri NR, Carroll MA, Renal cytochrome P450-related arachidonate metabolite inhibits (Na+ + K+)ATPase. Nature. 1985 Apr 18-24;314(6012):620-2.

[3]. Ding Y, Wu CC, Garcia V, 20-HETE INDUCES REMODELING OF RENAL RESISTANCE ARTERIES INDEPENDENT OF BLOOD PRESSURE ELEVATION IN HYPERTENSION. Am J Physiol Renal Physiol.

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[4]. Lai G, Wu J, Liu X, 20-HETE induces hyperglycemia through the cAMP/PKA-PhK-GP pathway. Mol Endocrinol. 2012 Nov;26(11):1907-16.