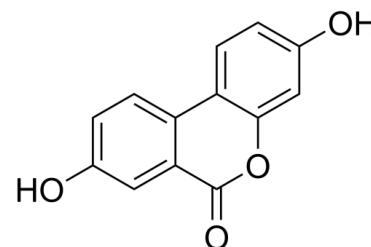


## Data Sheet

<b>Product Name:</b>	Urolithin A
<b>Cat. No.:</b>	CS-6305
<b>CAS No.:</b>	1143-70-0
<b>Molecular Formula:</b>	C <sub>13</sub> H <sub>8</sub> O <sub>4</sub>
<b>Molecular Weight:</b>	228.20
<b>Target:</b>	Apoptosis; Autophagy; DNA/RNA Synthesis; Drug Metabolite; Endogenous Metabolite; Reactive Oxygen Species
<b>Pathway:</b>	Apoptosis; Autophagy; Cell Cycle/DNA Damage; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
<b>Solubility:</b>	DMSO : 30 mg/mL (131.46 mM; Need ultrasonic)



### BIOLOGICAL ACTIVITY:

Urolithin A, a gut-microbial metabolite of ellagic acid, exerts anti-inflammatory, antiproliferative, and antioxidant properties. Urolithin A induces **autophagy** and **apoptosis**, suppresses cell cycle progression, and inhibits **DNA synthesis**<sup>[1][2]</sup>. *In Vitro*: Micromolar urolithin A concentrations induces both autophagy and apoptosis. Urolithin A suppresses cell cycle progression and inhibited DNA synthesis in human sw620 colorectal cancer cells<sup>[2]</sup>.

Urolithin A shows antiproliferative effects and inhibits T24 and Caco-2 cell growth with IC<sub>50</sub>s of 43.9 and 49 μM, respectively<sup>[3]</sup>. Urolithin A exerts a dose- and time-dependent significant arrest at G2/M and S phases after treatments with 50 and 100 μM at 24 and 48 h compared to control cells. It induces cell apoptosis with 50 and 100 μM<sup>[4]</sup>.

Urolithin A shows potent antiproliferative activity on HepG2 cells. When cell death is induced by Urolithin A, the expression of β-catenin, c-Myc and Cyclin D1 are decreased and TCF/LEF transcriptional activation is notably down-regulated. Urolithin A also increases protein expression of p53, p38-MAPK and caspase-3, but suppresses expression of NF-κB p65 and other inflammatory mediators<sup>[5]</sup>. *In Vivo*: The volume of paw edema is reduced at 1 h after oral administration of urolithin A. In addition, plasma in treated mice exhibited significant oxygen radical antioxidant capacity (ORAC) scores with high plasma levels of the unconjugated form at 1 h after oral administration of urolithin A<sup>[6]</sup>.

### PROTOCOL (Extracted from published papers and Only for reference)

**Cell Assay:** <sup>[2]</sup>Human colon cancer cells HT-29 are treated for 24 and 48 h at 100 and 50 μM of Urolithin A and Iso Urolithin A aglycones and their glucuronide conjugates. Cell viability and proliferation are measured using a TC10 automated cell counter with the addition of Trypan blue for viability determination. IC<sub>50</sub> values are determined by MTT assay<sup>[2]</sup>. **Animal Administration:** <sup>[4]</sup>Mice: Paw edema is induced in the right hind paw of ICR mice by the subcutaneous injection of 1% λ-carrageenan in physiological saline (50 μL). The inflammation level is quantified by the volume of paw edema. Urolithin A dissolved in 0.5% carboxymethylcellulose suspension is orally administered to the mice at 1 or 6 h before carrageenan injection. The anti-inflammatory effects of urolithin A on carrageenan-induced edema in mice are analyzed<sup>[4]</sup>.

### References:

[1]. Gong Z, et al. Urolithin A attenuates memory impairment and neuroinflammation in APP/PS1 mice.

[2]. Zhao W, et al. Metabolite of ellagitannins, urolithin A induces autophagy and inhibits metastasis in human sw620colorectal cancer cells. Mol Carcinog.

2018 Feb;57(2):193-200.

[3]. Qiu Z, et al. In vitro antioxidant and antiproliferative effects of ellagic acid and its colonic metabolite, urolithins, on human bladder cancer T24 cells. Food Chem Toxicol. 2013 Sep;59:428-37.

[4]. González-Sarrías A, et al. Antiproliferative activity of the ellagic acid-derived gut microbiota isourolithin A and comparison with its urolithin A isomer: the role of cell metabolism. Eur J Nutr. 2017 Mar;56(2):831-841.

[5]. Wang Y, et al. In vitro antiproliferative and antioxidant effects of urolithin A, the colonic metabolite of ellagic acid, on hepatocellular carcinomas HepG2 cells. Toxicol In Vitro. 2015 Aug;29(5):1107-15.

[6]. Ishimoto H, et al. In vivo anti-inflammatory and antioxidant properties of ellagitannin metabolite urolithin A. Bioorg Med Chem Lett. 2011 Oct 1;21(19):5901-4.

#### CAIndexNames:

6H-Dibenzo[b,d]pyran-6-one, 3,8-dihydroxy-

#### SMILES:

O=C1C2=CC(O)=CC=C2C3=CC=C(O)C=C3O1

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

Tel: 610-426-3128

Fax: 888-484-5008

E-mail: [sales@ChemScene.com](mailto:sales@ChemScene.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA