

# Product data sheet



MedKoo Cat#: 600134 Name: Epigallocatechin CAS#: 970-74-1 Chemical Formula: C <sub>15</sub> H <sub>14</sub> O <sub>7</sub> Exact Mass: 306.07395 Molecular Weight: 306.27	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

## 1. Product description:

(-)-Epigallocatechin ((-)-EGC) is a major green tea polyphenol with antioxidant, anti-inflammatory, and anticancer activities. It has been shown to scavenge DPPH radicals with an EC<sub>50</sub> value of 0.01 mM and to prevent the growth of several different AML cell lines at micromolar concentrations. Furthermore, at 30  $\mu$ M (-)-EGC can inhibit heregulin- $\beta$ 1-induced migration/invasion of MCF-7 human breast cancer cells. (Source: <https://www.caymanchem.com>).

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	75.33	245.96
DMF	25.0	81.63
Ethanol	5.0	16.33
PBS (pH 7.2)	1.0	3.27

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.27 mL	16.33 mL	32.65 mL
5 mM	0.65 mL	3.27 mL	6.53 mL
10 mM	0.33 mL	1.63 mL	3.27 mL
50 mM	0.07 mL	0.33 mL	0.65 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

- Gallemit PEM, Yooder S, Malaitad T, Thongboonkerd V. Epigallocatechin-3-gallate plays more predominant roles than caffeine for inducing actin-crosslinking, ubiquitin/proteasome activity and glycolysis, and suppressing angiogenesis features of human endothelial cells. *Biomed Pharmacother.* 2021 Jun 24;141:111837. doi: 10.1016/j.biopha.2021.111837. Epub ahead of print. PMID: 34175818.
- Panji M, Behmard V, Zare Z, Malekpour M, Nejadbiglari H, Yavari S, Nayerpour Dizaj T, Safaeian A, Maleki N, Abbasi M, Abazari O, Shabanzadeh M, Khanicheragh P. Suppressing effects of green tea extract and Epigallocatechin-3-gallate (EGCG) on TGF- $\beta$ -induced Epithelial-to-mesenchymal transition via ROS/Smad signaling in human cervical cancer cells. *Gene.* 2021 Aug 20;794:145774. doi: 10.1016/j.gene.2021.145774. Epub 2021 Jun 11. PMID: 34126197.

### In vivo study

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1. Siracusa R, Monaco F, D'Amico R, Genovese T, Cordaro M, Interdonato L, Gugliandolo E, Peritore AF, Crupi R, Cuzzocrea S, Impellizzeri D, Fusco R, Di Paola R. Epigallocatechin-3-Gallate Modulates Postoperative Pain by Regulating Biochemical and Molecular Pathways. *Int J Mol Sci.* 2021 Jun 26;22(13):6879. doi: 10.3390/ijms22136879. PMID: 34206850; PMCID: PMC8268037.

2. Zhang SL, Chen ZH, Lin DT, Yan Q, Gao F, Lin H. Epigallocatechin gallate regulates inflammatory responses and new bone formation through Wnt/ $\beta$ -Catenin/COX-2 pathway in spondyloarthritis. *Int Immunopharmacol.* 2021 Jun 18;98:107869. doi: 10.1016/j.intimp.2021.107869. Epub ahead of print. PMID: 34153673.

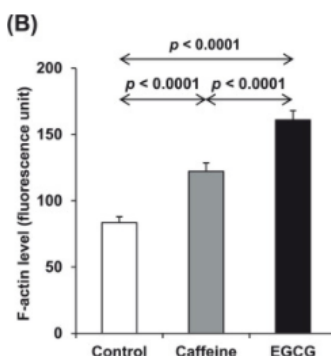
## 7. Bioactivity

### Biological target:

(-)-Epigallocatechin (Epigallocatechin) is the most abundant flavonoid in green tea, can bind to unfolded native polypeptides and prevent conversion to amyloid fibrils.

### In vitro activity

Caffeine and EGCG significantly increased F-actin level by 46.5% and 92.7%, respectively (Fig. 2B). In addition to immunofluorescence staining, Western blotting demonstrated the increased level of  $\beta$ -actin in caffeine-treated and EGCG-treated ECs when compared with the control cells (Fig. 2C). In consistent, quantitative data revealed that  $\beta$ -actin level was significantly enhanced by 53.4% and 76.0% by caffeine and EGCG, respectively (Fig. 2D). Thus, EGCG had greater effects to induce actin crosslinking activity in the EA.hy926 cells.



Reference: *Biomed Pharmacother.* 2021 Jun 24;141:111837. <https://pubmed.ncbi.nlm.nih.gov/34175818/>

### In vivo activity

Western blot analysis showed increased iNOS and COX-2 expressions in tissues from vehicle treated rats 24 h, and three and five days after surgery, as compared to sham animals. EGCG administration reduced both expressions at all timepoints (Figure 7A,B). Additionally, PGE2 levels were significantly increased 24 h, and three and five days after surgery and EGCG administration reduced its levels (Figure 7C).

Reference: *Int J Mol Sci.* 2021 Jul; 22(13): 6879. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8268037/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*