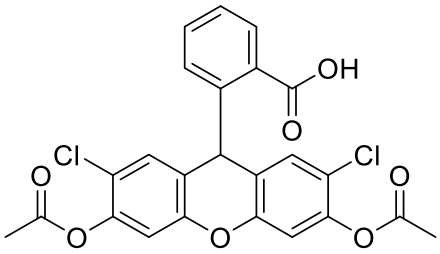
Product data sheet

MedKoo Cat#: 526046 Name: H2DCFDA CAS: 4091-99-0 Chemical Formula: $C_{24}H_{16}Cl_2O_7$ Exact Mass: 486.0273 Molecular Weight: 487.285	
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:
H2DCFDA is a fluorescent cell permeable ROS indicator.

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	70.24	144.15
Ethanol	10.62	21.80

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.05 mL	10.26 mL	20.52 mL
5 mM	0.41 mL	2.05 mL	4.10 mL
10 mM	0.21 mL	1.03 mL	2.05 mL
50 mM	0.04 mL	0.21 mL	0.41 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

1. Echeverría C, Martin A, Simon F, Salas CO, Nazal M, Varela D, Pérez-Castro RA, Santibanez JF, Valdés-Valdés RO, Forero-Doria O, Echeverría J. In Vivo and in vitro antitumor activity of tomatine in hepatocellular carcinoma. Front Pharmacol. 2022 Sep 9;13:1003264. doi: 10.3389/fphar.2022.1003264. PMID: 36160442; PMCID: PMC9501894.
2. Lyublinskaya OG, Ivanova JS, Pugovkina NA, Kozhukharova IV, Kovaleva ZV, Shatrova AN, Aksenov ND, Zenin VV, Kaulin YA, Gamaley IA, Nikolsky NN. Redox environment in stem and differentiated cells: A quantitative approach. Redox Biol. 2017 Aug;12:758-769. doi: 10.1016/j.redox.2017.04.016. Epub 2017 Apr 11. PMID: 28426982; PMCID: PMC5393314.

In vivo study

1. Tsymbalyuk O, Gerzanich V, Simard JM, Rathinam CV. Traumatic brain injury alters dendritic cell differentiation and distribution in lymphoid and non-lymphoid organs. J Neuroinflammation. 2022 Oct 1;19(1):238. doi: 10.1186/s12974-022-02609-5. PMID: 36183126; PMCID: PMC9526328.
2. Liu C, Sun ZR, Wang MM, Yang ZZ, Zhang W, Ren Y, Han XQ, Liu R, Li Q, Nie SN. Arctigenin attenuates paraquat-induced human lung epithelial A549 cell injury by suppressing ROS/p38 mitogen-activated protein kinases-mediated apoptosis. World J Emerg Med. 2022;13(5):373-378. doi: 10.5847/wjem.j.1920-8642.2022.086. PMID: 36119774; PMCID: PMC9420658.

7. Bioactivity
Biological target:

Product data sheet

H2DCFDA (DCFH-DA) is a cell-permeable probe used to detect intracellular reactive oxygen species (ROS) (Ex/Em=488/525 nm).

In vitro activity

Analysis of H2DCFDA probe oxidation by means of flow cytometry technique showed that the basal level of ROS in difESCs is about 6–7 times larger than that in ESCs (Fig. 2A, left panel).

Reference: Redox Biol. 2017 Aug;12:758-769. https://pubmed.ncbi.nlm.nih.gov/28426982/

In vivo activity

Long bones, spleen, peripheral lymph nodes (pLNs), mesenteric lymph nodes (mLNs), liver, lungs, skin and blood were collected from mice with either moderate-level cortical impact (CCI) or sham on day 1, day 3 or day 7 after TBI. Intracellular reactive oxygen species (ROS) were identified through H2DCFDA staining.

Reference: J Neuroinflammation. 2022 Oct 1;19(1):238. https://pubmed.ncbi.nlm.nih.gov/36183126/

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.