



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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### Lieferung & Zahlungsart

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### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

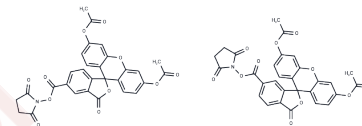
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## CFSE

## Chemical Properties

CAS No. :	150347-59-4
Formula:	C <sub>29</sub> H <sub>19</sub> N <sub>3</sub> O <sub>11</sub>
Molecular Weight:	557.46
Appearance:	no data available
Storage:	keep away from direct sunlight Powder: -20°C for 3 years   In solvent: -80°C for 1 year



## Biological Description

Description	CFSE (CFDA-SE) is a fluorescent dye with cell membrane permeability. CFSE irreversibly binds to intracellular proteins in living cells and is used for the detection of cell proliferation. The labeled cells fluoresce in green color with excitation wavelength of 488 nm and emission wavelength of 518 nm.
Targets(IC50)	Others
In vitro	<p><b>METHODS:</b> 1 mL of cells and CFDA (5 mM in 110 <math>\mu</math>L PBS) were flipped and mixed to label the cells. CFSE-labeled CD8+OT-I T cells were cultured with dendritic cells pulsed with varying amounts of OVA for 3 days, and CFSE profiles were examined using Flow Cytometry.</p> <p><b>RESULTS:</b> CD8+ T cells divided 1-3 times according to the CFSE dilution peak, and more T cells divided at higher antigen concentrations. [1]</p> <p><b>METHODS:</b> Human erythroleukemia cell line K562, mouse lymphoma cell line YAC-1, human breast cancer cell line MCF-7, and human melanoma cell line A375 were treated with CFDA (1-10 mM) for 1-6 h. Cell death was detected by Flow Cytometry.</p> <p><b>RESULTS:</b> CFDA was non-toxic to the cells, as the cell death rate due to CFDA labeling was less than 5%. [2]</p>
In vivo	<p><b>METHODS:</b> CFSE-labeled CD8+OT-I T cells were injected intravenously into the tail of C56BL/6J mice, followed by intravenous injection of OVA (20 <math>\mu</math>g), and CFSE profiles were measured three days later.</p> <p><b>RESULTS:</b> Most of the cells fell within 7 CFSE peaks, indicating that the cells had undergone up to 6 divisions. [1]</p> <p><b>METHODS:</b> To label thymocytes in vivo, CFDA (10 <math>\mu</math>M) was injected into the thymic lobes of anesthetized C56BL/6 mice.</p> <p><b>RESULTS:</b> CFDA labeled a representative sample of all thymocyte subpopulations and these cells migrated to peripheral lymphoid organs at a rate of approximately 2-3 x 10<sup>6</sup> cells/day. They enter the lymph nodes on day 1 post-injection and remain there for at least 21 days, while turnover is faster in the spleen. [3]</p>
Cell Research	The 5 mM CFDA-SE stock in DMSO is diluted to different concentrations(2 $\mu$ M, 3 $\mu$ M, 4 $\mu$ M, 5 $\mu$ M, 10 $\mu$ M and 20 $\mu$ M) in PBS with a total volume of 1 mL. After each cell line is harvested and washed three times with PBS, 1 $\times$ 10 <sup>9</sup> cells are added to equal volume of CFDA-SE with different concentrations and incubated at 37°C for 5, 6, 7, 8, 10 and 15 min with agitation. The labeling reaction is stopped for 1 min by adding an equal volume of heat inactivated fetal bovine serum. The CFDA-SE labeled cells are washed twice with

PBS and recounted, and the cell concentration is adjusted to  $6 \times 10^4$  cells/ml in IMDM containing 10% FCS. (Only for Reference)

### Solubility Information

Solubility	Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 93 mg/mL (166.8 mM), H <sub>2</sub> O: < 1 mg/mL (insoluble or slightly soluble), &lt; 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7939 mL	8.9693 mL	17.9385 mL
5 mM	0.3588 mL	1.7939 mL	3.5877 mL
10 mM	0.1794 mL	0.8969 mL	1.7939 mL
50 mM	0.0359 mL	0.1794 mL	0.3588 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

### Reference

Quah BJ, et al. The use of carboxyfluorescein diacetate succinimidyl ester (CFSE) to monitor lymphocyte proliferation. J Vis Exp. 2010 Oct 12;(44):2259.

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Tel: 781-999-4286 E\_mail: info@targetmol.com Address: 36 Washington Street, Wellesley Hills, MA 02481