

**Product Name:** CRANAD 2

**Catalog No.:** 4803

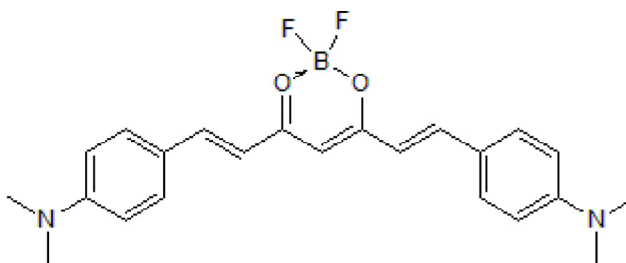
**Batch No.:** 1

CAS Number: 1193447-34-5

IUPAC Name: (T-4)-[(1E,6E)-1,7-Bis[4-(dimethylamino)phenyl]-1,6-heptadiene-3,5-dionato-kO<sup>3</sup>,kO<sup>5</sup>]difluoroboron

## 1. PHYSICAL AND CHEMICAL PROPERTIES

<b>Batch Molecular Formula:</b>	C <sub>23</sub> H <sub>25</sub> BF <sub>2</sub> N <sub>2</sub> O <sub>2</sub>
<b>Batch Molecular Weight:</b>	410.26
<b>Physical Appearance:</b>	Black solid
<b>Solubility:</b>	DMSO to 5 mM with gentle warming
<b>Storage:</b>	Store at -20°C
<b>Batch Molecular Structure:</b>	



## 2. ANALYTICAL DATA

<b>HPLC:</b>	Shows 99.6% purity
<b><sup>1</sup>H NMR:</b>	Consistent with structure
<b>Mass Spectrum:</b>	Consistent with structure

<b>Microanalysis:</b>	Carbon Hydrogen Nitrogen		
Theoretical	67.34	6.14	6.83
Found	67.04	6.12	6.9

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Description:**

Key information: CRANAD 2 is a curcumin derivatized near-infrared probe that binds to A $\beta$ 40 aggregates. Penetrates the blood-brain barrier. Used for: amyloid- detection in vitro, tissue and in vivo. Shown to bind to plaques in APP-PS1 transgenic mice, in vitro. Detects senile plaques in 19-month-old Tg2576 mice in vivo. Application: Fluorescence microscopy, epifluorescence microscopy. Properties and Photophysical Data: CRANAD 2 binds to A $\beta$  aggregates ( $K_d = 38$  nM) and elicits upon interacting with A $\beta$  aggregates, an emission blue shift (from 805 nm to 715 nm). When unbound in PBS, excitation and emission maxima ( $\lambda$ ) ar... Please see product specific page on www.tocris.com for full description.

**Physical and Chemical Properties:**

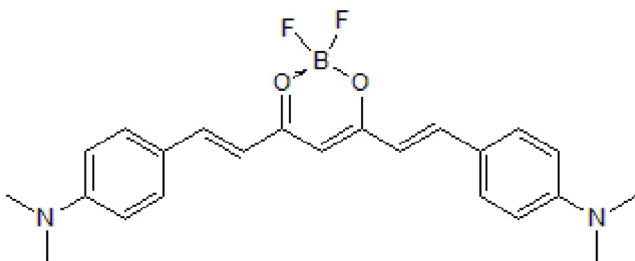
Batch Molecular Formula:  $\text{C}_{23}\text{H}_{25}\text{BF}_2\text{N}_2\text{O}_2$

Batch Molecular Weight: 410.26

Physical Appearance: Black solid

**Minimum Purity:**  $\geq 98\%$

**Batch Molecular Structure:**



**References:**

Ni *et al* (2021) *In-vitro* and *in-vivo* characterization of CRANAD-2 for multi-spectral optoacoustic tomography and fluorescence imaging of amyloid-beta deposits in Alzheimer mice. *Photoacoustics* **23** 100285. PMID: 34354924.

Ran *et al* (2011) Non-conjugated small molecule FRET for differentiating monomers from higher molecular weight amyloid beta species. *PLoS One*. **6** e19362. PMID: 21559413.

Ran *et al* (2009) Design, synthesis, and testing of difluoroboron-derivatized curcumins as near-infrared probes for *in vivo* detection of amyloid-beta deposits. *J.Am.Chem.Soc.* **131** 15257. PMID: 19807070.

**Storage:** Store at  $-20^{\circ}\text{C}$

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

**Solubility & Usage Info:**

DMSO to 5 mM with gentle warming

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a  $45\text{-}60^{\circ}\text{C}$  water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. \*Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at  $-20^{\circ}\text{C}$  or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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