# PRODUCT INFORMATION

## CCVJ

*Item No. 17870*

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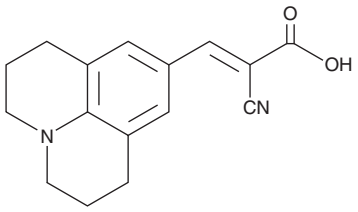
| **CAS Registry No.:** | 142978-18-5 |
| **Formal Name:** | 2-cyano-3-(2,3,6,7-tetrahydro-1H,5H-benzo[ij]quinolizin-9-yl)-2-propenoic acid |
| **Synonym:** | 9-(2-Carboxy-2-cyanovinyl)julolidine |
| **MF:** | $C_{16}H_{16}N_2O_2$ |
| **FW:** | 268.3 |
| **Purity:** | ≥95% |
| **UV/Vis.:** | $\lambda_{max}$: 279, 441 nm |
| **Supplied as:** | A crystalline solid |
| **Storage:** | -20°C |
| **Stability:** | ≥4 years |




*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Laboratory Procedures

CCVJ is supplied as a crystalline solid. A stock solution may be made by dissolving the CCVJ in the solvent of choice, which should be purged with an inert gas. CCVJ is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of CCVJ in these solvents is approximately 10 and 15 mg/ml, respectively.

CCVJ is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, CCVJ should first be dissolved in DMF and then diluted with the aqueous buffer of choice. CCVJ has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day..

### Description

Fluorescent molecular rotors are molecules whose fluorescence is inversely proportional to its intramolecular rotation.[1] The intramolecular rotation of these probes, and hence their fluorescence, depends on the immediate microenvironment of the probe.[1] As a result, fluorescent molecular rotors are used to evaluate changes in solution and membrane viscosity, polymerization or aggregation processes, and protein (un)folding.[2-4] CCVJ is a fluorescent molecular rotor characterized by low background fluorescence, low fluorescence anisotropy, and good water solubility.[1,4-6] Moreover, CCVJ has large hydrophobic structures, allowing it to associate in a non-covalent manner with hydrophobic pockets in proteins in solution.[1] CCVJ is broadly used to monitor changes in solution and molecular characteristics.[1,4,5]

### References


1. Haidekker, M.A., Nipper, M., Mustafic, A., *et al.* Dyes with segmental mobility: Molecular rotors, *in* Advanced Fluorescence Reporters in Chemistry and Biology I: Fundamentals and Molecular Design. Springer Science & Business Media, 267-308 (2010).
2. Haidekker, M.A., Ling, T., Angolo, M., *et al.* New fluorescent probes for the measurement of cell membrane viscosity. *Chem. Biol.* **8(2)**, 123-131 (2001).
3. Iio, T., Itakura, M., Takahashi, S., *et al.* 9-(Dicyanovinyl)julolidine binding to bovine brain calmodulin. *J. Biochem.* **109(4)**, 499-502 (1991).
4. Hawe, A., Filipe, V., and Jiskoot, W. Fluorescent molecular rotors as dyes to characterize polysorbate-containing IgG formulations. *Pharm. Res.* **27(2)**, 314-326 (2010).
5. Ablinger, E., Leitgeb, S., and Zimmer, A. Differential scanning fluorescence approach using a fluorescent molecular rotor to detect thermostability of proteins in surfactant-containing formulations. *Int. J. Pharm.* **441(1-2)**, 255-260 (2013).
6. Levitt, J.A., Chung, P.H., Kuimova, M.K., *et al.* Fluorescence anisotropy of molecular rotors. *Chemphyschem.* **12(3)**, 662-672 (2011).





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