

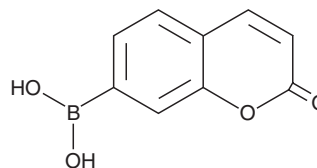
# PRODUCT INFORMATION



## Coumarin Boronic Acid

Item No. 14051

CAS Registry No.:	1357078-03-5
Formal Name:	B-(2-oxo-2H-1-benzopyran-7-yl)-boronic acid
Synonym:	CBA
MF:	C <sub>9</sub> H <sub>7</sub> BO <sub>4</sub>
FW:	190.0
Purity:	≥98%
UV/Vis.:	λ <sub>max</sub> : 280, 320 nm
Ex./Em. Max:	332/470 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



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

### Laboratory Procedures

Coumarin Boronic Acid (CBA) is supplied as a crystalline solid. A stock solution may be made by dissolving the CBA in the solvent of choice. CBA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of CBA in these solvents is approximately 1, 3, and 11 mg/ml, respectively.

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

### Description

CBA is a fluorescent probe that can be used to detect peroxynitrite (Item No. 81565), hypochlorous acid, and hydrogen peroxide.<sup>1-3</sup> It reacts with peroxynitrite at an exponentially faster rate ( $k = 1.1 \mu\text{M/s}$ ) than hydrogen peroxide ( $k = 1.5 \text{ M/s}$ ) and moderately faster rate than hypochlorous acid.<sup>1,2</sup> Peroxynitrite oxidizes CBA into the fluorescent product 7-hydroxycoumarin (COH), which displays excitation/emission maxima of 332/470 nm, respectively.<sup>3</sup>

### References

1. Zielonka, J., Sikora, A., Hardy, M., *et al.* Boronate probes as diagnostic tools for real time monitoring of peroxynitrite and hydroperoxides. *Chem. Res. Toxicol.* **25(9)**, 1793-1799 (2012).
2. Zielonka, J., Zielonka, M., Sikora, A., *et al.* Global profiling of reactive oxygen and nitrogen species in biological systems. *J. Biol. Chem.* **287(5)**, 2984-2995 (2012).
3. Zielonka, J., Sikora, J., Joseph, J., *et al.* Peroxynitrite is the major species formed from different flux ratios of co-generated nitric oxide and superoxide. *J. Biol. Chem.* **285(19)**, 14210-6 (2010).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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