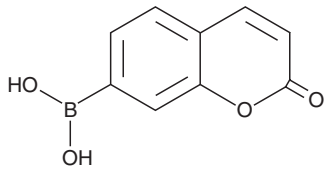
PRODUCT INFORMATION

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:	$C_9H_7BO_4$
FW:	190.0
Purity:	≥98%
UV/Vis.:	λ_{max}: 280, 320 nm
Ex./Em. Max:	332/470 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

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, which should be purged with an inert gas. CBA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. 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.[1-3] It reacts with peroxynitrite at an exponentially faster rate (k = 1.1 µM/s) than hydrogen peroxide (k =1.5 M/s) and moderately faster rate than hypochlorous acid.[1,2] Peroxynitrite oxidizes CBA into the fluorescent product 7-hydroxycoumarin (COH), which displays excitation/emission maxima of 332/470 nm, respectively.[3]

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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM