

# AzuFluor<sup>TM</sup> 483-Bpin: Azulene-Based Fluorescent Probe for ROS/RNS small molecule (tool compound)

**Catalogue number:** 157848

**Sub-type:** Fluorescent Probe

**Images:**

## Contributor

**Inventor:** Lloyd Murfin ; Tony James ; Simon Lewis

**Institute:** University of Bath

**Images:**

## Tool details

**\*FOR RESEARCH USE ONLY**

**Name:** AzuFluor<sup>TM</sup> 483-Bpin: Azulene-Based Fluorescent Probe for ROS/RNS small molecule (tool compound)

**Alternate name:** AzuFluor<sup>TM</sup> 483-Bpin, Diethyl 2-amino-6-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)azulene-1,3- dicarboxylate

**Class:**

**Conjugate:**

**Description:** Reactive oxygen species (ROS) and reactive nitrogen species (RNS) are important mediators in many physiological and pathological processes. The one-electron reduction of O<sub>2</sub> in vivo leads to the formation of O<sub>2</sub><sup>-</sup> (superoxide), which in turn undergoes disproportionation catalyzed by superoxide dismutase to give O<sub>2</sub> and H<sub>2</sub>O<sub>2</sub> (hydrogen peroxide). Another fate of O<sub>2</sub><sup>-</sup> is to react with endogenously produced NO (nitric oxide) to form ONOO<sup>-</sup> (peroxynitrite) via a nonenzymatic process. Ordinarily, the flux of H<sub>2</sub>O<sub>2</sub> is tightly regulated; aberrant H<sub>2</sub>O<sub>2</sub> production or overexposure is implicated in the pathogenesis of many diseases such as cancer and neurodegenerative conditions. Similarly, while ONOO<sup>-</sup> has roles in signal transduction, its strongly oxidizing and nitrating properties mean it can react in an uncontrolled manner with various biomolecules. Elevated levels of ONOO<sup>-</sup> have been linked to cardiovascular, neurodegenerative, and inflammatory diseases as well as cancer. In view of this, there is significant need for tools and techniques to elucidate the roles of ONOO<sup>-</sup>, H<sub>2</sub>O<sub>2</sub>, and other ROS/RNS in biological systems.

**Purpose:**

**Parental cell:**

**Organism:**

**Tissue:**

**Model:**

**Gender:**

**Isotype:**

**Reactivity:**

**Selectivity:**

**Host:**

**Immunogen:**

**Immunogen UNIPROT ID:**

**Sequence:**

**Growth properties:**

**Production details:**

**Formulation:**

**Recommended controls:**

**Bacterial resistance:**

**Selectable markers:**

**Additional notes:** pH: Fluorescence intensity greatest at pH 7-8. Optimal two-photon excitation wavelength λ<sub>ex</sub> = 800nm.

## Target details

**Target:**

**Target alternate names:**

**Target background:**

**Molecular weight:** 412.2046

**Ic50:**

## Applications

**Application:**

**Application notes:**

## Handling

**Format:**

**Concentration:**

**Passage number:**

**Growth medium:**

**Temperature:**

**Atmosphere:**

**Volume:**

**Storage medium:**

**Storage buffer:**

**Storage conditions:** Ambient

**Shipping conditions:** Dry Ice

## Related tools

**Related tools:**

## References

**References:**