

BES-H₂O₂-Ac

Hydrogen peroxide (H₂O₂) detection probes.

Manufacturer : [Wako](#)

Molecular Formula : C₂₈H₁₁F₇O₈S

M.W. = 640.44 g / mol

Procedure

Step 1: Prepare stock solution (10 mM)

Dissolve 1 mg powder in **156.2 µL DMSO** to form a 10 mM stock solution. Store at room temperature, must be **protected from light**.

Step 2: Stain

Short time

Dilute to **10 - 50 µM** with growth medium. Incubate at room temperature for ≈ 20 mins, protected from light.

Long time

1. Make medium contains **100 nM** BES-H₂O₂-Ac.
 - Add **4 µL** of 10 mM stock solution to **400 mL** medium before the medium solidified (~ 50°C), mix thoroughly, must be protected from light.
2. Grow the plant on this medium for ≈ 6 days, cut the root and observe using confocal microscope.

Step 3: Confocal parameters

Set the confocal parameters as follow:

Parameters	Theoretical value	Our machine
Excitation peak	485 nm	488 nm
Emission peak	515 nm	505 ~ 541 nm
Magnification		5X
Laser intensity (488 nm)		20.0%
Master Gain (488 nm)		700 V
Master Gain (T-PMT)		240 V
Digital Gain		1.0
Pinhole		$\approx 35 \mu\text{m}$
Z-stack interval		$16 \mu\text{m}$
Scan speed		6
Scan direction		$\leftrightarrow$

Step 4: Image processing

Please visit: <https://mylab-root.github.io/>

- Go to: MENU $\rightarrow$ SOFTWARE

Download the BES-H2O2-Ac executable.

Done !!!
