

## PLANT CHEMILUMINESCENCE

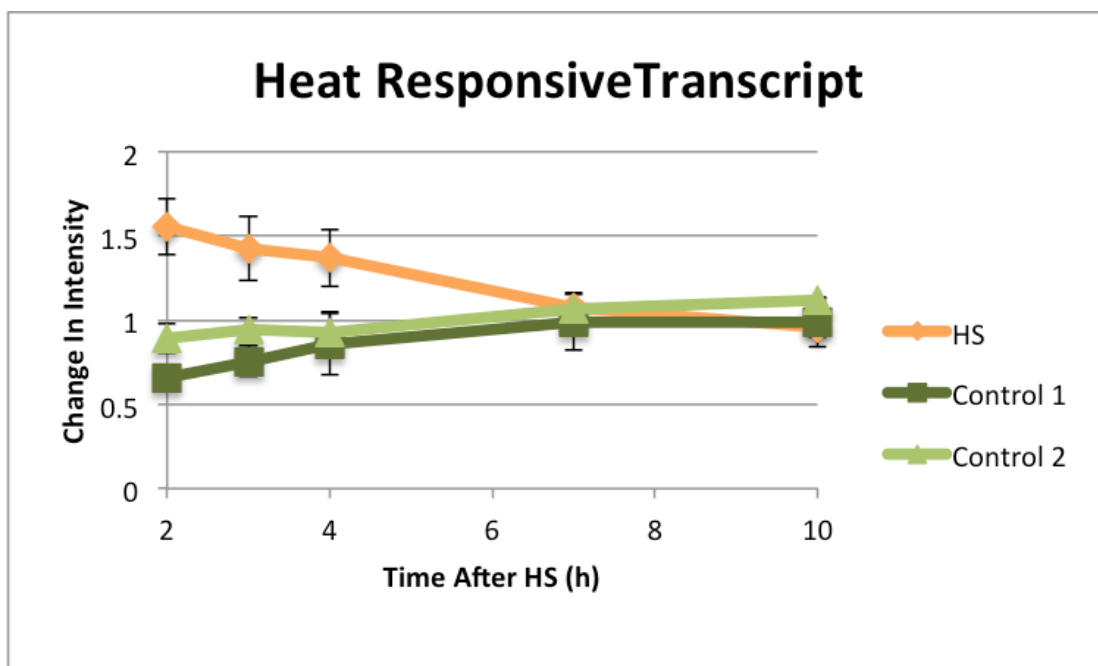
July 2015, Northern Ireland

### Eagle V chemiluminescence imaging

Courtesy of [Dr Colleen Doherty](#)

Chemiluminescence imaging requires the highest sensitivity and long exposure time in order to be able to detect the few photons emitted by the chemical reaction of interest with the living organisms.

Dr. Colleen Doherty uses a Raptor Photonics Eagle V camera in her study of the circadian rhythm in plants. Using Arabidopsis modified to express firefly Luciferase Photinus Pyralis on a known heat shock gene she was able to observe unexpected expression in the roots of the plants. Both images were taken with 5min exposure and are about 45min apart before and after the heat shock. The increased luminescence is clearly visible in the roots.



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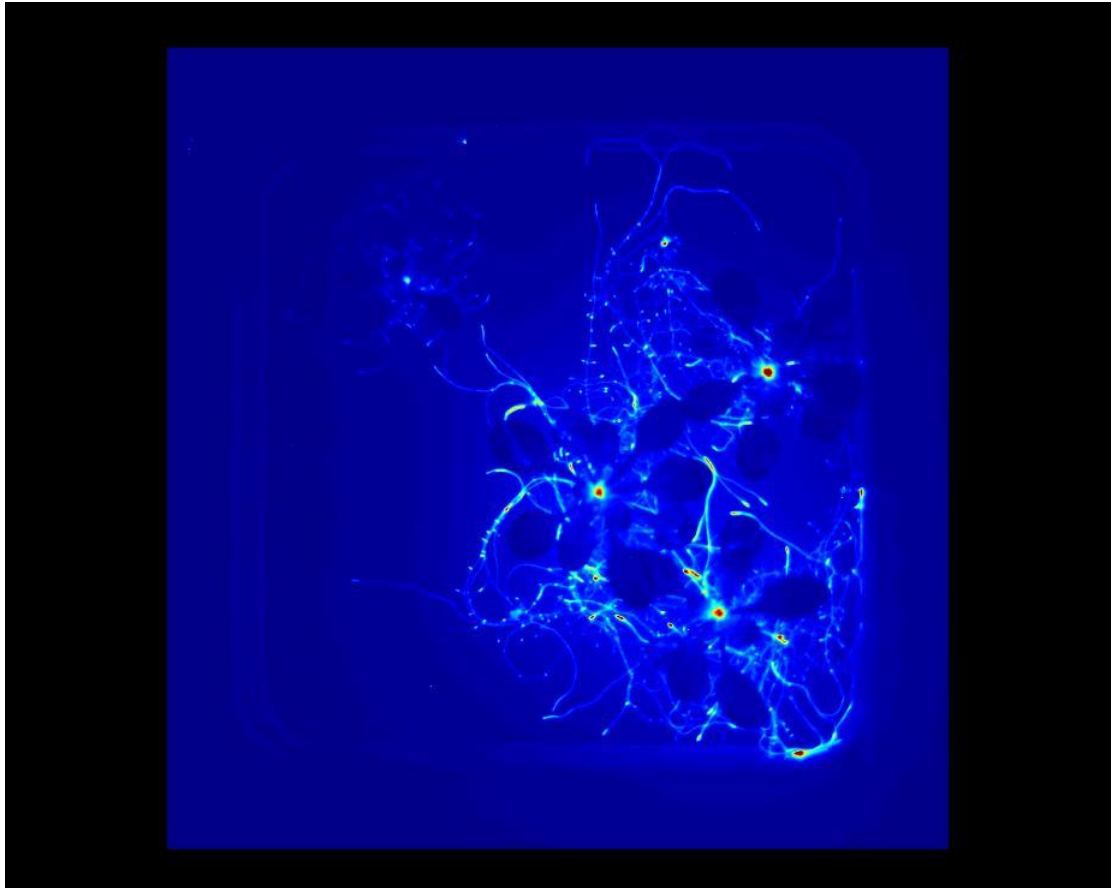


Figure 1: 5min exposure before Heat Shock

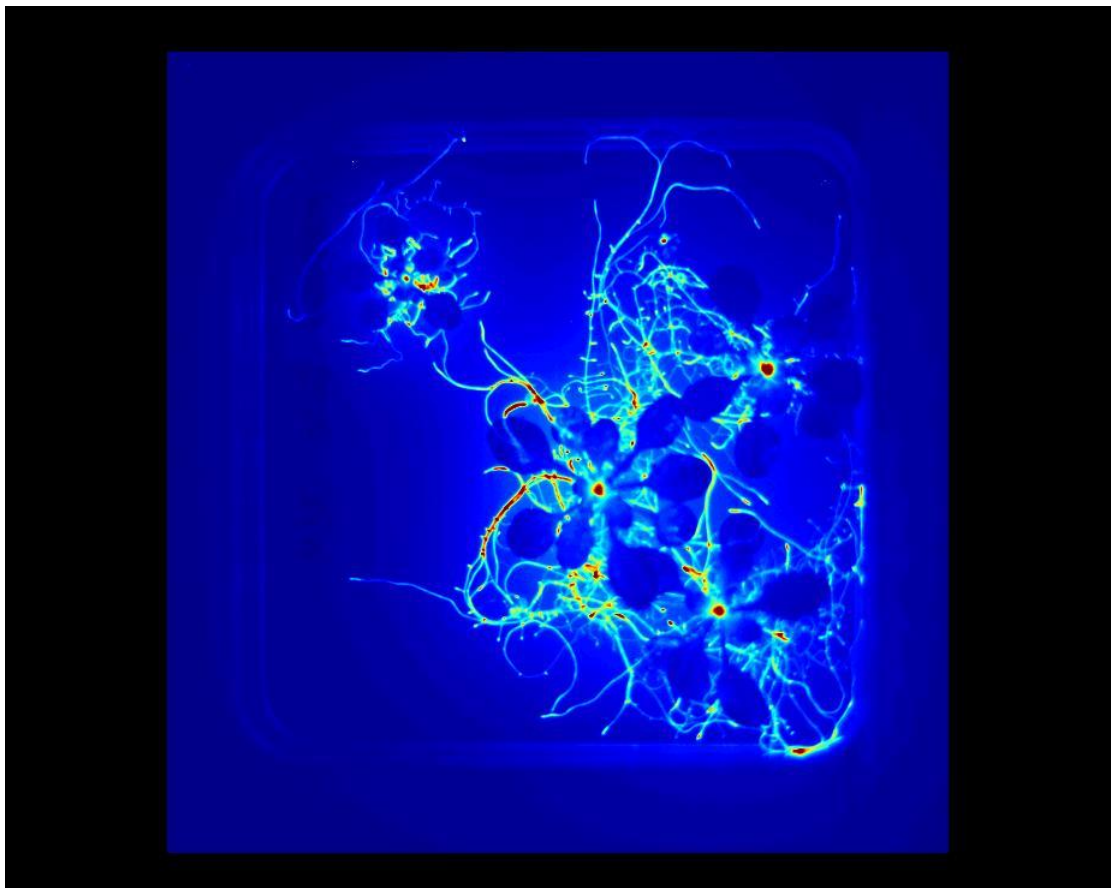


Figure 2: 5min exposure 45min after Heat Shock



### About Eagle V

- 2048x2048 cooled to  $\Delta$ -110°C
- 13.5 $\mu$ m x 13.5 $\mu$ m
- >90% QE @ 550nm
- <2,3 e/p Readout noise @ 75kHz
- <0,0001e/p/s, Dark current @ min T°C
- >90dB dynamic range
- TEC with liquid cooling to -100°C
- Lifetime vacuum beyond std. warranty of the camera

### About Raptor Photonics

Raptor Photonics Limited is a global leader and manufacturer of high performance, industrial-grade and extremely rugged ultra-low light digital & analogue cameras. Raptor specializes in complete cameras and core engine solutions using CCD, EMCCD, Scientific CMOS and SWIR sensor technology. The extreme low light capability of Raptor's cameras makes them ideal for day/night surveillance, homeland security and scientific markets. Raptor Photonics Ltd is a registered ISO 9001:2008 company and is headquartered in Larne, Northern Ireland.

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