Analysis and Shared Experience

Your Name: Siouxsie

Protocol Name: Biophotonic Imaging

What probelm does your protocol solve? What is it doing?

Visualisation of processes occuring within living animals or just generally (e.g in 96 well plates).
- detecting biological processes or entities whcih emit light
- in realtime

Measure timing and location

Give examples of experiments or situations where you have used this protocol.

Monitoring infectious processes using bioluminescently labelled bacteria
monitoring effectiveness of antibiotics/vaccination/treatment
monitoring development of labelled tumours
monitoring movement of labelled substances and their differnt injection routes
monitoring gene expression (timing and location)

Why does this protocol work? Why is it a good solution?

light travels through flesh and skin so allows visualisation of processes in a non-destructive, humane, rapid, cost-effective manner

better dynamics than harvesting animals/samples at each timepoint

Are there other types of problems or related lab procedures this protocol could be use for?

Using light as a surrogate - biomarker or reporter

If you follow the protocol to the letter, are there circumstances that could cause this protocol to fail or give incorrect results? Have you encountered such scenarios? If so, list them...

Light emitted must be strong enough to be detected
fluorescent signal must be above natural fluorescence of tissue

Are there important assumptions or things not stated in the protocol? Are there things you wish someone had told you before you started?

We assume there is no issue with substrate penetration for cases where we need to administor a substrate to generate light.

Light travels through media in a wavelength dependent fashion! Colour of light matters

What in your experience is tricky about this protocol? What are the key and critical steps for success?

-location of signal
-wavelength of light emitted
-levels of anesthesia
- placement of animal
- type of anesthesia IP/inhalation
- substrate type and delivery method
- keeping the animal warm

What things do you sometimes need to change or tweak to get things to work?

Are there things you had to optimise before adopting this version of the protocol?

Group contributors, questions, placeholders, ideas, feedback...