Featured Publication Note: Better far-red fluorescent protein for whole body imaging

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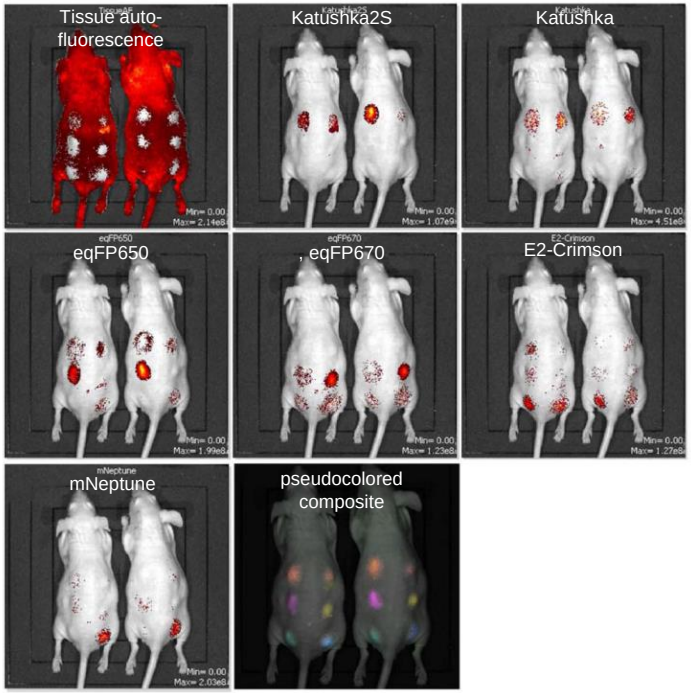

Fig 1: Multi-label spectral unmixing of multiple fluorophores in a single mouse.

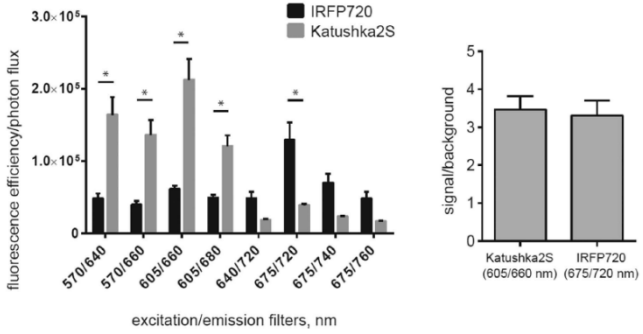

Fig 2: Katushka2S and iRFP720 SNRs.

Genetically encoded far-red and near-infrared fluorescent proteins (RFPs) enable efficient non-invasive *in vivo* imaging in studies of tumorigenesis, embryogenesis, and inflammation in model animals. In this article, a thorough evaluation and comparison of currently available RFPs is outlined and it was demonstrated that:

- The signals of various RFPs can be spectrally unmixed based on different signal-to-noise ratios (SNR) in different channels **(Fig 1)**.
- When HEK293T cells were transiently co-transfected with Kasushka2S, eqFP650, mCardinal, mNeptune 2.5 as indicated and normalized to firefly luciferase photon flux for each implant, **Katushka2S** (Evrogen.com) produced the brightest and fastest maturing fluorescence in all experimental setups **(Fig 3)**.
- At the same time, SNRs for Katushka2S and near-infrared bacterial phytochrome, **iRFP720** (Vladislav Verkhusha, Addgene.org) were comparable in their optimal channels **(Fig 2)**.

The authors conclude that due to their distinct spectral and genetic characteristics the pairing of Katushka2S and iRFP720 are an optimal far-red/near-infrared fluorescent protein combination to inform on molecular signals and cell populations in dual color, whole body imaging studies.

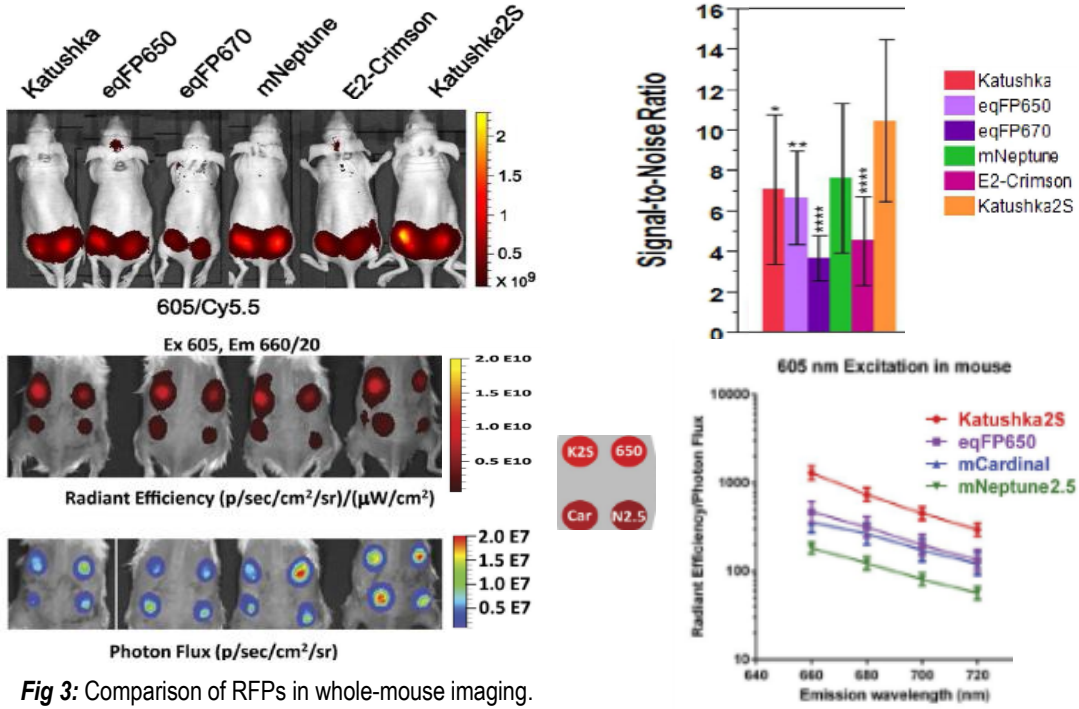

Fig 3: Comparison of RFPs in whole-mouse imaging.

Luker et al. (2015) - Comparative study reveals better far-red fluorescent protein for whole body imaging. Scientific Reports: 5 article number 10332.