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1.0 Instructions in using the template

This document describes the skeleton templates for 3 broad types of answers:

1. Text-based answers
2. Figures and tables
3. Supplementary image data & movies

The students are encouraged to build upon the provided template to make the submission readable, clear and concise for the graders. This includes but not limited to:

- Choice of word font and style
- Page format (e.g. single-column, double-column)
- Referencing and citation style
- Display of figures and tables
- Supplementary folder and file naming convention, and reference to them in the text-based answers

To facilitate the grading and feedback process, the submission of assignment will be done in:

- One PDF for texts, figures and tables
    - ass_<nr>_<your name>_<short description.>.pdf

- Single or multiple ImageJ and/or Python scripts (do not zip the scripts if there are multiple of them)
    - ass_<chr>_<your name>_<short description.>.ijm (ImageJ)
    - ass_<chr>_<your name>_<short description.>.py (python)
    - ass_<chr>_<your name>_<short description.>.ipynb (python notebook)

- One zipped folder(s) of processed image data or movies
    - ass_<chr>_<your name>_<short description>.zip (archive)

2.0 Skeleton templates

1. **Text-based answer**

Assignment title: *the_title_here*
Author name: *your_name_here*
Date of submission: *the_date_here*

This is an example of a text-based answer consisting of texts (obviously), citations, in-text references to tables and figures. Expectedly, the text-based answer is used to describe your approach to solving the questions in the assignment, (image) data inspection and analysis, and to elaborate your results and (strongly encouraged) discussion relating your results and the biological aspect of the questions.

Figure 1 and Table 1 below describe further the presentation of images and tabular data we'd like to see in your submission. We refer you to these references (FocalPlane, 2021, Schmied & Jambor, 2021, Springer, n.d.) for more tips in presenting image data.

Reference

FocalPlane. (2021, May 25). *Preparing your manuscript: guidelines for writing microscopy methods and figures*. FocalPlane. https://focalplane.biologists.com/2021/05/25/preparing-your-manuscript-guidelines-for-writing-microscopy-methods-and-figures/

Mastop, M., Bindels, D. S., Shaner, N. C., Postma, M., Gadella, T. W. J., & Goedhart, J. (2017). Characterization of a spectrally diverse set of fluorescent proteins as FRET acceptors for mTurquoise2. Scientific Reports, 7(1). https://doi.org/10.1038/s41598-017-12212-x

Schmied, C., & Jambor, H. K. (2021). Effective image visualization for publications – a workflow using open access tools and concepts. *F1000Research*, *9*, 1373. https://doi.org/10.12688/f1000research.27140.2

Springer. (n.d.). *Figures and tables*. Www.springer.com. https://www.springer.com/gp/authors-editors/authorandreviewertutorials/writing-a-journal-manuscript/figures-and-tables/10285530

2. Figures and tables

Example of a figure and its description (Mastop et al., 2017)

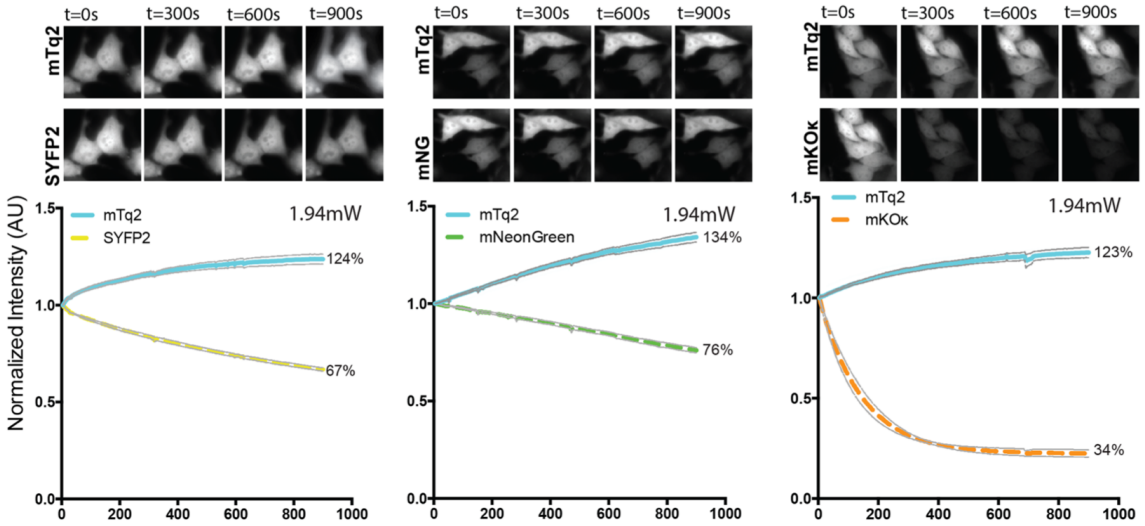

Figure 5. Photostability of tandem pairs during ratiometric FRET measurements. Fusion constructs of mTurquoise2 and acceptor fluorescent protein were used in this experiment. The power is shown in the graphs. The thin lines display the 95% confidence intervals. The photostability of the fusion constructs is shown under continuous illumination with 420 nm light for 900 s. Images of cells after 0 s, 300 s, 600 s and 900 s illumination show the fluorescence intensity. The width of the images are 58.14µm for SYFP2-mTurquoise2 (1.94 mW), 87.21µm for mNeonGreen-mTurquoise2, 80.07µm for mKOκ-mTurquoise2, 116.28µm for SYFP2-mTurquoise2 (3.73 mW), 147.56µm for mScarlet-I-mTurquoise2 and 116.28µm for mCherry-mTurquoise2. For the graph the initial fluorescence intensity was set on 100% and it is stated what percentage of the initial fluorescence is left after 900 s illumination. The number of cells imaged is: SYFP2-mTq2 (1.94 mW) n = 23; mNeonGreen-mTq2 n = 21; mKOκ-mTq2 n = 15;

Example of a table and its description (Mastop et al., 2017)

Table 3. FRET efficiencies of mTurquoise2 paired with the different acceptors, calculated from spectral imaging results (Fig. 4). 1E is the average FRET efficiency ± SEM

Acceptor	Number of cells	FRET efficiency (%)[1]
EGFP	37	44 ± 0.3
Clover	36	47 ± 0.7
mNeonGreen	46	59 ± 0.3
SYFP2	39	42 ± 0.7
mOrange	24	20 ± 1.5
mOrange2	22	21 ± 1.0
mKO2	34	35 ± 0.9
mKOκ	24	47 ± 0.2
TagRFP-T	50	17 ± 0.8
mRuby2	66	43 ± 1.2
mScarlet-I	47	34 ± 0.4
mCherry	28	32 ± 0.4
mKate2	27	28 ± 0.4

3. Supplementary image data & movies

Supplementary files associated with the submission must be zipped. Please follow the naming convention below in naming the files:

File 1: ass_<chr>_<your name>_<short description>.<file extension>
File 2: ass_<chr>_<your name>_<short description>.<file extension>
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