mGold spec sheet

mGold sequence

mGold is mVenus(L46F;T63S); FPbase ID = UNETX

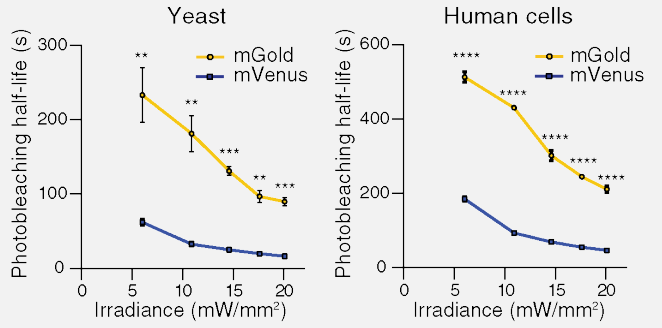
MVSKGEELFTGVVPILVELDGDVNGHKFSVSGEGEGDATYGKLTLKFICTTGKLPVPWPTLVTSLGYGLQC
FARYPDHMKQHDFFKSAMPEGYVQERTIFFKDDGNYKTRAEVKFEGDTLVNRIELKGIDFKEDGNILGHK
LEYNYNSHNVYITADKQKNGIKANFKIRHNIEDGGVQLADHYQQNTPIGDGPVLLPDNHYLSYQSKLSKD
PNEKRDHMVLLEFVTAAGITLGMDELYK

in vitro characteristics

Protein	λ_{ex}	λ_{em}	ε	Ψ	Molecular Brightness	pKa	K_d for Cl^- (M)	Photobleaching Half-Life (s)
mGold	515	531	107 ± 6	0.64	68	5.9	> 1	29.8 ± 0.1
mVenus	515	532	110 ± 6	0.65	72	5.9	> 1	10.1 ± 0.2

- λex = Excitation maximum (in nm).
- λem = Emission maximum (in nm).
- ε = Extinction coefficient, in mM^{-1} cm^{-1}; SEM is shown (n = 3 technical replicates).
- Ψ = Quantum yield of fluorescence.
- Molecular brightness was calculated as a product of ε and Ψ.
- pKa was calculated as the pH at which the in vitro fluorescence intensity is half of its maximal value (SEM for n = 3 technical replicates was < 0.1).
- Kd for Cl- was calculated as the concentration of Cl- which fluorescence intensity to reach half its initial value. Both mGold and mVenus retained more than half their initial fluorescences at 1 M of Cl- .
- Photobleaching half-life was determined as the time taken for fluorescence intensity to reach half of its initial value with continuous widefield illumination with 510/25-nm light at 62.5 mW/mm^2 . Mean ± SEM is shown. n = 7 technical replicates.

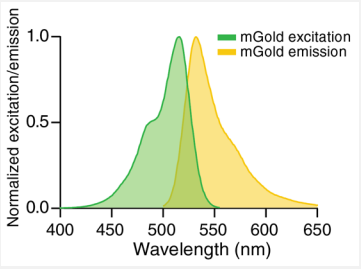
in cellulo photostability at different irradiances



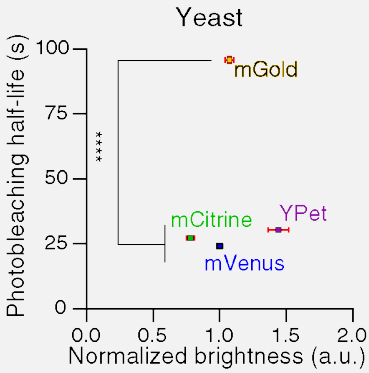
Photobleaching setup: continuous wide-field illumination of 510/25-nm LED light. n = 3 colonies for yeast or 3 transfections for HEK293A cells. Error bars show SEM.

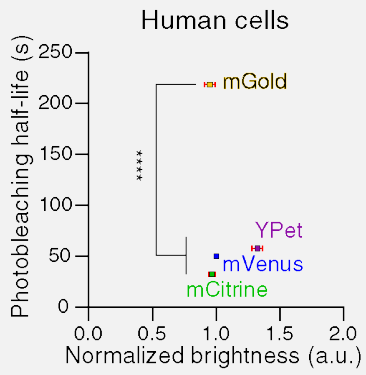
See DOI: 10.1126/sciadv.abb7438 for statistics and more information.

Excitation and emission spectra



mGold is more photostable than other commonly used YFPs





Photobleaching setup: continuous wide-field illumination of 510/25-nm LED light at 20 mW/mm^2. n = 6 colonies for yeast or n = 6 transfections for HEK293A cells. Error bars show SEM.

See DOI: 10.1126/sciadv.abb7438 for statistics and more information.