

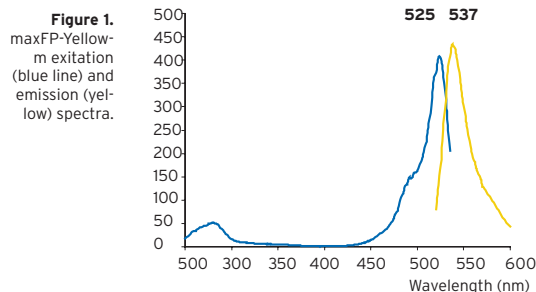
## maxFP™-Yellow-m description

maxFP-Yellow-m is a mutant of a natural yellow fluorescent protein from *Phialidium* sp. (Cnidaria; Hydrozoa; Hydroida; Leptomedusae; Campanulariidae). Wild-type protein was modified to increase fluorescence brightness and decrease dimerization tendency. Mutagenesis resulted in a monomeric maxFP-Yellow mutant with bright yellow fluorescence. However, maxFP-Yellow was found to be inappropriate for generating fusions to its C-terminus due to folding problems. To overcome this problem, maxFP-Yellow-m mutant suitable for generation of fusion to its C-terminus was produced by random mutagenesis of maxFP-Yellow.

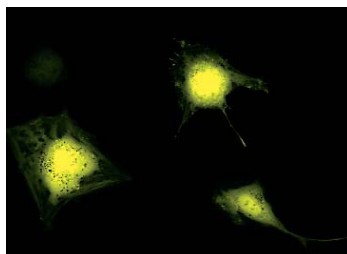
maxFP-Yellow-m properties	
Molecular weight	26 kDa
Polypeptide length	234 AA
Fluorescence color	yellow*
Excitation max	525 nm
Emission max	537 nm
Quantum yield	0.39
Extinction coefficient	124,000 M <sup>-1</sup> cm <sup>-1</sup>
Brightness**	48.4
pKa	6.0
Time before detection in mammalian cells	8-12 hr
Structure	weak dimer

\* See Figure 1 for maxFP-Yellow excitation and emission spectra.

\*\*Brightness is a product of extinction coefficient and quantum yield, divided by 1000.



**Figure 2.** HUVECs were nucleofected with 2 µg pmaxFP-Yellow-C and analysed for maxFP-Yellow-m expression after 24 h.



### maxFP-Yellow-m advantages

- › Super bright true yellow fluorescence
- › Successful expression in stable cell lines
- › Successful performance in C-terminal fusions.

### Possible limitations

maxFP-Yellow-m has a tendency to form weak dimers. According to gel-electrophoresis data, recombinant maxFP-Yellow-m exists mainly as a monomer, however a dimeric form is also visible. Notwithstanding this, successful performance of maxFP-Yellow-m in C-fusions was demonstrated.

### maxFP-Yellow-m use

- › Suitable for monitoring transcription from different promoters and promoter/enhancer combinations;
- › Suitable for expression in transiently transfected cells as well as in long-term cell cultures and stable cell lines;
- › Suitable for generating C-terminal fusions for protein localization and interaction studies.
- › maxFP-Yellow-m was not tested in N-terminal fusions.

### Examples of use

#### Expression of maxFP-Yellow-m in mammalian cells.

HUVEC cells were nucleofected with an expression vector carrying maxFP-Yellow-m gene. Bright yellow cell fluorescence was clearly detected within 24 hours after transfection. No cell toxic effects and visible maxFP-Yellow-m aggregation were observed (Figure 2).

### References

Shagin D.A., Barsova E.V., Yanushevich Y.G., Fradkov A.F., Lukyanov K.A., Labas Y.A., Ugalde J.A., Meyer A., Nunes J.M., Widder E.A., Lukyanov S.A. and Matz M.V. **GFP-like proteins as ubiquitous Metazoan superfamily: evolution of functional features and structural complexity.** Mol. Biol. Evol. 2004; 21(5): 841-850.

maxFP-Yellow-m is equivalent to PhiYellow-m (Evrogen).