

mCerulean

- Snapp Lab Plasmid Info

Plasmid #	Plasmid information	Vector information	Drug resistance
166	N1 mCerulean A206K	Clontech	Kan
163	C1 mCerulean A206K	Clontech	Kan

- Sequence

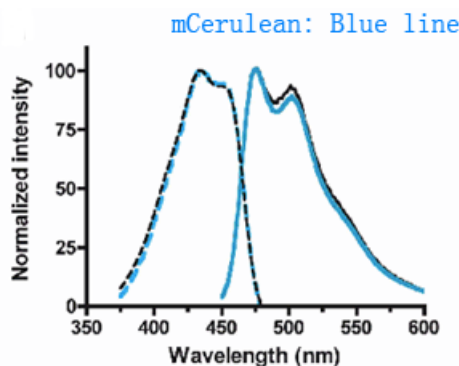
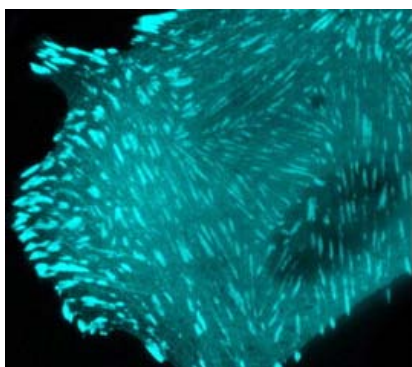
Protein

MVSKGEELFTGVVPIILVELDGDVNGHKFVSVSGEGGDATYGKLTILKFICTTGKLPVWPVTLVTTLTWGVQCFARYPDHMKQHDFFKSAMPEGYVQERTIFFKDDGNYKTRA
EVKFEEDTLVNRIELKGIIDFKEDGNILGHKLEYNAISDNVYITADKQKNGIKANFKIRHNIEDGSVQLADHYQQNTPIGDGPVLLPDNHYLSTQSKLSKDPNEKRDHMLL
EFVTAAGITLGMDELYK*

cDNA

ATGGTGAGCAAGGGCGAGGAGCTGTTCCACGGGGTGGTGCATCCTGGTTCGAGCTGGACGGCGACGTAACGGCCACAAGTTCAGCGTGTCCGGCGAGGGCGAGGGCGAT
GCCACCTACGGCAAGCTGACCCTGAAGTTCATCTGCACCACCGGCAAGCTGCCCGTGCCTGGCCACCTCGTGACCACCTGACCTGGGGCGTGCAGTGCTTCGCCCGC
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GAGGTGAAGTTCGAGGGCGACACCTGGTGAACCGCATCGAGCTGAAGGGCATCGACTTCAAGGAGGACGGCAACATCCTGGGGCACAAGCTGGAGTACAACGCCATCAGC
GACAACGTCTATATCACCGCGACAAGCAGAAGAACGGCATCAAGGCCAACTTCAAGATCCGCCACAACATCGAGGACGGCAGCGTGCAGCTCGCCGACCACTACCAGCAG
AACACCCCATCGCGCAGCGCCCGTGTGCTGCCCGACAACCACTACCTGAGCACCCAGTCCAAGCTGAGCAAGACCCCAACGAGAAGCGCGATCACATGGTCTCTGCTG
GAGTTCGTGACCGCGCCGGGATCACTCTCGGCATGGACGAGCTGTACAAGTAA

- Image [1] and Spectrum [2]



mCerulean-paxillin-N-22 (chicken; focal adhesions)

- Properties [2-4]

Protein	Excitation Maximum (nm)	Emission Maximum (nm)	Molar Extinction Coefficient ($M^{-1}cm^{-1}$)	Quantum Yield	<i>in vivo</i> Structure	Relative Brightness (% of EGFP)
mCerulean	433/445	475/503	43,000	0.62	monomer	79

- Other details [2, 3]

- $t_{0.5}$ for maturation: 66s
- $t_{0.5}$ for photobleaching: 1s to bleach 1/e of fluorescence
- photostability: 36 (21% of EGFP)
- pKa: 4.7

- Use

Better photostability and pH sensitivity than CFP precursor.

- Notes:

- Cerulean was made monomeric (A206K). Cerulean3 and oxCerulean are superior cyan FPs. They fold better and thus appear brighter.

- Reference

1. Shaner, N.C., G.H. Patterson, and M.W. Davidson, *Advances in fluorescent protein technology*. J Cell Sci, 2007. 120(Pt 24): p. 4247-60.
2. Rizzo, M.A., et al., *An improved cyan fluorescent protein variant useful for FRET*. Nat Biotechnol, 2004. 22(4): p. 445-9.
3. Kremers, G.J., et al., *Cyan and yellow super fluorescent proteins with improved brightness, protein folding, and FRET Forster radius*. Biochemistry, 2006. 45(21): p. 6570-80.
4. Olenych, S.G., et al., *The fluorescent protein color palette*. Curr Protoc Cell Biol, 2007. Chapter 21: p. Unit 21 5.