

Living Colors® Fluorescent Proteins

Broadest spectrum available—9 proteins, 5 brilliant colors

Table I: Living Colors Novel Fluorescent Proteins (NFPs)

Protein	Color (nm)	Excitation Max (nm)	Emission Max (nm)	Time to detection (hours)	Relative Fluorescent Intensity	Quaternary Structure	Utility as a Reporter	Utility in Fusions	Comments
DsRed-Monomer	Red	556	586	12	++	Monomer	++	++++	<ul style="list-style-type: none"> Very soluble protein True monomer Excellent for multicolor labeling, and fusion proteins
DsRed2	Red	563	582	24	+++	Tetramer	+++	++	<ul style="list-style-type: none"> Reduced aggregation compared to DsRed1 Many subcellular localization vectors available
DsRed-Express	Red	557	579	8–12	+++	Tetramer	++++	+++	<ul style="list-style-type: none"> Preferred for flow cytometry due to diminished green emission Faster maturation Can be used in fusion tag protein applications
AsRed2	Red	576	592	8–12	++	Tetramer	+++	+	
HcRed1	Far red	588	618	16	+	Dimer	+	++	<ul style="list-style-type: none"> Far red fluorescence can be multiplexed with DsRed-Express or DsRed-Monomer
AmCyan1	Blue	458	489	8–12	+++	Tetramer	+++	+	
ZsYellow1	Yellow	529	539	8–12	++	Tetramer	+++	+	<ul style="list-style-type: none"> True yellow emission Ideal for multicolor applications
ZsGreen1	Green	493	505	8–12	++++	Tetramer	++++	+	<ul style="list-style-type: none"> Exceptionally bright Ideal for reporter applications
AcGFP1	Green	475	505	8–12	++	Monomer	+++	++++	<ul style="list-style-type: none"> True green monomer Excellent for multicolor labeling and fusion tags Good solubility

Note: HcRed1 is derived from *Heteractis crispa* reef coral. AmCyan, ZsGreen, ZsYellow, and AsRed are derived from *Anthozoa* reef coral. DsRed-Monomer, DsRed2, and DsRed-Express derive from *Discosoma* sp. reef coral. AcGFP1 derives from *Aequorea coerulea* jellyfish.

Notice to Purchaser

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FL682084



Table II: Living Colors® Vectors

Vector	Vector Name	Cat. No.	Host	Promoter	Prokaryotic Selection	Eukaryotic Selection	
Source Vector (pNFP) <ul style="list-style-type: none"> A convenient source of the fluorescent protein cDNA Flanking restriction sites allow easy excision of the full-length coding sequence 	pAsRed2	632451	Bacterial	Lac	Amp	None	
	pDsRed2	632404			Amp	None	
	pDsRed-Express	632412			Amp	None	
	pDsRed-Monomer	632467			Amp	None	
	pHcRed1	632410			Amp	None	
	pAmCyan	632440			Amp	None	
	pZsYellow	632443			Amp	None	
	pAcGFP1	632468, 632426			Amp	None	
	pZsGreen	632446			Amp	None	
	pGFPuv	632312			Amp	None	
	pTimer ⁺	632402			Amp	None	
	Promoterless Mammalian Expression Vector (pNFP-1) <ul style="list-style-type: none"> Monitor transcription from different promoters and promoter/enhancer combinations 	pDsRed2-1			632405	Mammalian	None
pDsRed-Express-1		632413	Kan	Neo			
pDsRed-Express-DR		632423	Bacterial	Kan	Neo		
pHcRed1-DR		632422		Kan	Neo		
pHcRed1-1		632411		Kan	Neo		
pZsGreen1-1		632473		Kan	Neo		
pZsGreen1-DR		632428		Kan	Neo		
pTimer-1 ⁺		632403		Kan	Neo		
pDsRed-Express-N1		632429		Mammalian	CMV IE	Kan	Neo
pDsRed-Monomer-N1, Hyg-N1		632465, 632494				Kan	Neo/Hygro
pHcRed1-N1/1	632424	Kan	Neo				
pDsRed2-N1	632406	Kan	Neo				
pAsRed2-N1	632449	Kan	Neo				
pAmCyan1-N1	632442	Kan	Neo				
pZsYellow1-N1	632445	Kan	Neo				
pAcGFP1-N1, Hyg1 -N1	632469, 632489	Kan	Neo				
pAcGFP1-N2, N3, N Vector set	632483, 632484, 632485	Kan	Neo				
pLP-AcGFP1-N Creator Acceptor	632472	Kan	Neo				
pZsGreen1-N1	632448	Kan	Neo				
C-Terminal Protein Fusion Expression Vector (pNFP-C1) <ul style="list-style-type: none"> Express a protein of interest as a fusion to the C-terminus of the fluorescent protein Monitor transfection efficiencies General reporter for mammalian cells 	pDsRed2-C1	632407	Mammalian	CMV IE	Kan	Neo	
	pDsRed-Express-C1	632430			Kan	Neo	
	pDsRed-Monomer-C1, Hyg-C1	632466, 632495			Kan	Neo/Hygro	
	pHcRed1-C1	632415			Kan	Neo	
	pAsRed2-C1	632450			Kan	Neo	
	pAmCyan1-C1	632441			Kan	Neo	
	pZsYellow1-C1	632444			Kan	Neo	
	pAcGFP1-C1, Hyg-C1	632470, 632492			Kan	Neo/Hygro	
	pAcGFP1-C2, C3, C Vector set	632481, 632482, 632486			Kan	Neo	
	pLP-AcGFP1-C Creator Acceptor	632471			Kan	Neo	
pZsGreen1-C1	632447	Kan	Neo				
Bicistronic (pIRES2-NFP) <ul style="list-style-type: none"> Contains an internal ribosome entry site (IRES), which permits translation of two ORFs from a single mRNA Cells can be selected by flow cytometry 	pIRES2-DsRed-Express	632463	Mammalian	CMV IE	Kan	Neo	
	pIRES2-DsRed2	632420			Kan	Neo	
	pIRES2-AcGFP1	632435			Kan	Neo	
	pIRES2-ZsGreen1	632478			Kan	Neo	
Cotransfection Marker Vectors <ul style="list-style-type: none"> Determine transfection efficiency 	pCMV-DsRed-Express	632416	Mammalian	CMV IE	Kan	Neo	
Proteasome Sensor Vector <ul style="list-style-type: none"> Real time monitoring of proteasome activity in living cells 	pZsProSensor-1	632425	Mammalian	CMV IE	Kan	Neo	
Subcellular Localization (pNFP-Organelle) <ul style="list-style-type: none"> Ready-to-use vectors for labeling various subcellular structures including mitochondria, nucleus, endoplasmic reticulum, and peroxisomes 	pDsRed-Monomer-F	632493	Mammalian	CMV IE	Kan	Neo	
	pDsRed2-ER	632409			Kan	Neo	
	pDsRed2-Mito	632421			Kan	Neo	
	pDsRed2-Nuc	632408			Kan	Neo	
	pDsRed2-Peroxi	632418			Kan	Neo	
	pHcRed1-Mito	632434			Kan	Neo	
	pHcRed1-Nuc	632433			Kan	Neo	
	pDsRed Monomer-Actin	632479			Kan	Neo	
	pDsRed Monomer-Golgi	632480			Kan	Neo	
	pAcGFP1-Actin	632453			Kan	Neo	
	pAcGFP1-Tubulin	632488			Kan	Neo	
	pAcGFP1-C1-Golgi	632464			Kan	Neo	
	pAcGFP1-N1-Mito	632432			Kan	Neo	
	pAcGFP1-N1-Nuc	632431			Kan	Neo	
	pAcGFP1-Mem	632491			Kan	Neo	
	pAcGFP1-Endo	632490			Kan	Neo	
In-Fusion™ Ready Prelinearized Vector <ul style="list-style-type: none"> Prelinearized vectors ready for PCR cloning without restriction digest or ligase Allows parallel cloning of fusion proteins with different colors 	pDsRed-Monomer-C In-Fusion	632498	Mammalian	CMV IE	Kan	Neo	
	pDsRed-Monomer-N In-Fusion	632499			Kan	Neo	
	pAcGFP1-C In-Fusion	632501			Kan	Neo	
	pAcGFP1-N In-Fusion	632500			Kan	Neo	

* Shifts color from green to red over time. Check our site www.clontech.com for product updates.