

Fluorochrome excitation with one-photon and two-photon systems.

Some of the information provided (e.g. 2P exc with “>” and “<” marks) is from Leica. This information is from a Leica system with a SpectraPhysics laser. Other info is empirical on our Leica SP2 with a Coherent Mira 9000 system. If you have more fluorochromes to add or wish to modify the existing data, please contact us with the dye name and any synonyms, and other information that will make this chart more useful to all users.

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Application	Dye	Solvents	1P exc	2P exc	UV exc	Max em
Cell wall/ fibers	Aniline blue	water	500	790	607-610	
	Calcofluor	water	440/500-520	780>820	340-400	400-440
(Polysciences)	FungiFluor (cellufluor)	water	350-400	780	250-400	350-400
Nucleic acid stains	DAPI, Hoechst	Water	350/470	700, 780>820	345	455, 478
	Feulgen	Water, ethanol	480/560	780>820	460	550
	Propidium Iodide (PI)	Water	540		305, 536	617
	Acridine orange		467		503	530, 640
	Ethidium Bromide	Water	488		493	620
(Molecular Probes)	SYTO 13				488	509
	SYTO 85				579	599
	YOYO-1				491	508
Protein conjugates	FITC	Ethanol, Water	490/525	780>820	495	519
	TRITC (rhodamine)		541/572	800-840	547	572
	Rhodamine B			840		600
	Texas red		596/620	780	589	615
(Jackson Imm. Res.)	CY2	water	489/506	780>800	489	506
	CY3	water	550/570	780	512, 552	565, 615
	CY5	water	649/670	780<820	625-650	670
	AMCA (7 amino-4 methylcoumarin-3-acetate)		431/498	780	347	444
(Molecular Probes)	Alexa 488				495	519
	Alexa 532				531	554
	Alexa 546				556	573
	Alexa 568				578	603
	Alexa 594				590	617
Gene expression (ClonTech)	BFP		395/509	780>820	382	448
	CFP		434/477	780>840	430	476
	GFP		488/507	800-850	498	516
	E GFP		490	900-950	498	516
	YFP		514/527	860<900	520	532
	DsRed1 & 2 (redFP)				558	583
Mitochondria	Rhodamine 123		507/529	780-860	480	550
(Molecular Probes)	Mito Tracker red	DMSO			579	599
	MitoTracker red 594				598	630
	MitoTracker Green FM				490	516

Lipids	Nile Red	ethanol		810	559	640
Calcium	Calcium green		488/530	780>820	506	531
	Ca Green/ Texas Red		488/530, 596/620	780		
	Yellow Chameleon		464/527	780>820		
	Indo1-free			700		490
	Indo1-Ca ⁺⁺			590		405
	Fura-2 free			700		362
	Fura-2 Ca ⁺⁺			?		?
Viability, esterases (PolySciences)	Fluorescein Diacetate	acetone	495/520	780>820	490-512	515-535
	CTC (viab – bacteria)			720-740	450	630
Neuronal tracer	DID			780		
	Lucifer Yellow CH	EtOH (water)			488 (428)	531
Lysosomes	Lysotracker (Mol. Probes)	MeOH, DMSO			577	590
Membrane Probes	DiI			700	561	565
	Filipin				380	510
triple probe (on Leica/Coherent system)	Dapi, FITC, and Rhodamine			740		see above