

染料名称	Excitation (nm)	Emission (nm)	分子量	备注信息
Reactive and conjugated probes				
Hydroxycoumarin	325	386	331	Succinimidyl ester
Aminocoumarin	350	445	330	Succinimidyl ester
Methoxycoumarin	360	410	317	Succinimidyl ester
Cascade Blue	(375);401	423	596	Hydrazide
Pacific Blue	403	455	406	Maleimide
Pacific Orange	403	551		
Lucifer yellow	425	528		
NBD	466	539	294	NBD-X
R-Phycoerythrin (PE)	480;565	578	240 k	
PE-Cy5 conjugates	480;565;650	670		aka Cychrome, R670, Tri-Color, Quantum Red
PE-Cy7 conjugates	480;565;743	767		
Red 613	480;565	613		PE-Texas Red
PerCP	490	675		Peridinin chlorophyll protein
TruRed	490, 675	695		PerCP-Cy5.5 conjugate
FluorX	494	520	587	GE Healthcare
Fluorescein	495	519	389	FITC; pH sensitive
BODIPY-FL	503	512		
TRITC	547	572	444	TRITC
X-Rhodamine	570	576	548	XRITC
Lissamine Rhodamine B	570	590		
Texas Red	589	615	625	Sulfonyl chloride
Allophycocyanin (APC)	650	660	104 k	
APC-Cy7 conjugates	650;755	767		PharRed
Alexa Fluor 系列荧光染料				
Alexa Fluor 350	343	442	410	
Alexa Fluor 405	401	421	1028	
Alexa Fluor 430	434	540	702	
Alexa Fluor 488	499	519	643	QY 0.92
Alexa Fluor 500	503	525	700	
Alexa Fluor 514	517	542	714	
Alexa Fluor 532	530	555	724	QY 0.61
Alexa Fluor 546	561	572	1079	QY 0.79
Alexa Fluor 555	553	568	1250	QY 0.1
Alexa Fluor 568	579	603	792	QY 0.69

Alexa Fluor 594	591	618	820	QY 0.66
Alexa Fluor 610	610	629	1285	
Alexa Fluor 633	632	648	1200	
Alexa Fluor 647	652	668	1300	QY 0.33
Alexa Fluor 660	663	691	1100	
Alexa Fluor 680	680	702	1150	
Alexa Fluor 700	696	719	1400	
Alexa Fluor 750	752	776	1300	
Alexa Fluor 790	782	804	1750	

Cy 系列荧光染料

Cy2	489	506	714	QY 0.12
Cy3	(512);550	570;(615)	767	QY 0.15
Cy3B	558	572;(620)	658	QY 0.67
Cy3.5	581	594;(640)	1102	QY 0.15
Cy5	(625);650	670	792	QY 0.28
Cy5.5	675	694	1128	QY 0.23
Cy7	743	767	818	QY 0.28

核酸相关探针染料

Hoechst 33342	343	483	616	AT-selective
DAPI	345	455		AT-selective
Hoechst 33258	345	478	624	AT-selective
SYTOX Blue	431	480	~400	DNA
Chromomycin A3	445	575		CG-selective
Mithramycin	445	575		
YOYO-1	491	509	1271	
Ethidium Bromide	493	620	394	
Acridine Orange	503	530/640		DNA/RNA
SYTOX Green	504	523	~600	DNA
TOTO-1, TO-PRO-1	509	533		Vital stain, TOTO: Cyanine Dimer TO-PRO: Cyanine Monomer
Thiazole Orange	510	530		
Propidium Iodide (PI)	536	617	668.4	
LDS 751	543;590	712;607	472	DNA (543ex/712em), RNA (590ex/607em)
7-AAD	546	647		7-aminoactinomycin D, CG-selective
SYTOX Orange	547	570	~500	DNA
TOTO-3, TO-PRO-3	642	661		
DRAQ5	647	681,697	413	usable excitation down to 488

细胞功能探针

Indo-1	361/330	490/405	1010	AM ester. Low/High Ca ⁺⁺ ,			
Fluo-3	506	526	855	AM ester. pH > 6			
DCFH	505	535	529	2' 7' Dichlorodihydrofluorescein, oxidized form			
DHR	505	534	346	Dihydrorhodamine 123, oxidized form, light catalyzes oxidation			
SNARF	548/579	587/635		pH 6/9			
荧光蛋白							
				QY	BR	PS	
Y66H	360	442					
Y66F	360	508					
EBFP	380	440		0.18	0.27		monomer
EBFP2	383	448			20		monomer
Azurite	383	447			15		monomer
GFPuv	385	508					
T-Sapphire	399	511		0.60	26	25	weak dimer
Cerulean	433	475		0.62	27	36	weak dimer
mCFP	433	475		0.40	13	64	monomer
ECFP	434	477		0.15	3		
CyPet	435	477		0.51	18	59	weak dimer
Y66W	436	485					
mKeima-Red	440	620		0.24	3		monomer
TagCFP	458	480			29		dimer
AmCyan1	458	489		0.75	29		tetramer
mTFP1	462	492			54		dimer
S65A	471	504					
Midoriishi Cyan	472	495		0.9	25		dimer
Wild Type GFP	396, 475	508	26k	0.77			
S65C	479	507					
TurboGFP	482	502	26 k	0.53	37		dimer
TagGFP	482	505			34		monomer
S65L	484	510					
Emerald	487	509		0.68	39	0.69	weak dimer; (Invitrogen)
S65T	488	511					
EGFP	488	507	26k	0.60	34	174	weak dimer
Azami Green	492	505		0.74	41		monomer
ZsGreen1	493	505	105k	0.91	40		tetramer
TagYFP	508	524			47		monomer
EYFP	514	527	26k	0.61	51	60	weak dimer

Topaz	514	527			57		monomer
Venus	515	528		0.57	53	15	weak dimer
mCitrine	516	529		0.76	59	49	monomer
YPet	517	530		0.77	80	49	weak dimer
TurboYFP	525	538	26 k	0.53	1.65		dimer
ZsYellow1	529	539		0.65	13		tetramer
Kusabira Orange	548	559		0.60	31		monomer
mOrange	548	562		0.69	49	9	monomer
mKO	548	559		0.60	31	122	monomer
TurboRFP	553	574	26 k	0.67	62		dimer
tdTomato	554	581		0.69	95	98	tandem dimer
TagRFP	555	584			50		monomer
DsRed monomer	556	586	~28k	0.1	3.5	16	monomer
DsRed2 ("RFP")	563	582	~110k	0.55	24		
mStrawberry	574	596		0.29	26	15	monomer
TurboFP602	574	602	26 k	0.35	26		dimer
AsRed2	576	592	~110k	0.21	13		tetramer
mRFP1	584	607	~30k	0.25			monomer
J-Red	584	610		0.20	8.8	13	dimer
mCherry	587	610		0.22	16	96	monomer
HcRed1	588	618	~52k	0.03	0.6		dimer
Katusha	588	635			23		dimer
mKate (TagFP635)	588	635			15		monomer
TurboFP635	588	635	26 k	0.34	22		dimer
mPlum	590	649		0.10	4.1	53	
mRaspberry	598	625		0.15	13		monomer; faster photobleach than mPlum
其他探针							
Monochlorobimane	380	461	226	Glutathione probe			
Calcein	496	517	623	pH > 5			

Ex: Peak excitation wavelength (nm)

Em: Peak emission wavelength (nm)

QY: Quantum yield

BR: Brightness; Extinction coefficient * Quantum yield / 1000

PS: Photostability; time to 50% brightness (sec)