BP Fluor 647 /Cy5/ Cyanine 650 Antibody Labeling Kit

Component

The BP Fluor 647, Cy5, and Cyanine 650 conjugation kits are available in two formats, NHS and maleimide. Other formats are available upon request.

Kit Component		Product size						storage
		BP Fluor 647 NHS antibody labeling kit			BP Fluor 647 Mal antibody labeling kit			
		BP-50029 (1x100 ug)	BP-50028 (3x100 ug)	BP-50027 (1x1 mg)	BP-50050 (1x100 ug)	BP-50049 (3x100 ug)	BP-50048 (1x1 mg)	
A	Active Dye	1	3	1	1	3	1	-20
B	Reaction Buffer	1	1	1	1	1	1	RT
C	Desalt column	1	3	1	1	3	1	RT
D	DMSO, 1rxn 1ml	1	1	1	1	1	1	RT
E	NaN_3 3% 0.5ml	1	1	1	1	1	1	RT
Note:								

Kit Component		Product size						storage
		Cyanine 650 NHS antibody labeling kit			Cyanine 650 Mal antibody labeling kit			
		BP-50023 (1x100 ug)	BP-50022 (3x100 ug)	BP-50021 (1x1 mg)	BP-50044 (1x100 ug)	BP-50043 (3x100 ug)	BP-50042 (1x1 mg)	
A	Active Dye	1	3	1	1	3	1	-20
B	Buffer	1	1	1	1	1	1	RT
C	Desalt column	1	3	1	1	3	1	RT
D	DMSO, 1rxn 1ml	1	1	1	1	1	1	RT
E	NaN3 3% 0.5ml	1	1	1	1	1	1	RT
Note:								

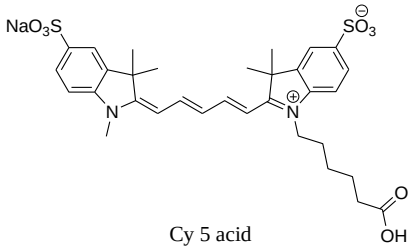
Kit Component		Product size						storage
		Cy5 NHS antibody labeling kit			Cy5 Mal antibody labeling kit			
		BP-50026 (1x100 ug)	BP-50025 (3x100 ug)	BP-50024 (1x1 mg)	BP-50047 (1x100 ug)	BP-50046 (3x100 ug)	BP-50045 (1x1 mg)	
A	Active Dye	1	3	1	1	3	1	-20
B	Buffer	1	1	1	1	1	1	RT
C	Desalt column	1	3	1	1	3	1	RT
D	DMSO, 1rxn 1ml	1	1	1	1	1	1	RT
E	NaN3 3% 0.5ml	1	1	1	1	1	1	RT
Note:								

Overview

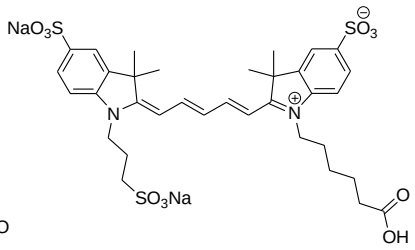
These three dyes, BP Fluor 647(Alexa Fluor® 647 equivalent), Cyanine 650, and Cy5, are bright green-fluorescent dye optimal for use with the 633, 650 nm argon laser. The three dyes have same fluorophore backbone structure which contributes the almost identical absorption and emission spectrum. They are only different from the number of soluble groups SO_3Na. i.e. Cy5 has two SO_3Na group, and Cyanine 650 has three while BP Fluor 647 has four SO_3Na.

All these dyes are water soluble and pH-insensitive from pH 4 to pH 10. The sulfonate groups make it high water soluble and less aggregation in the aqueous solution. These dyes are used for protein and antibody labeling, or nucleic acid applications with high labeling density for numerous bio applications.

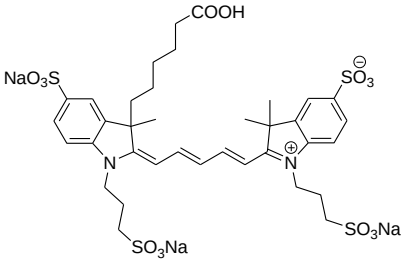
Dye	Laser line	Filter	Abs Max	Emi. Max.	extinction coefficient	CF_{280}
BP Fluor 647	Helium/Neon-Laser (633nm) Krypton/ Argon-Laser (647nm) red diode laser(650nm)	Cy5	650	668	270,000	0.03
Cy5		Cy5	649	666	270000	0.03
Cyanine 650		Cy5	648	668	270000	0.03



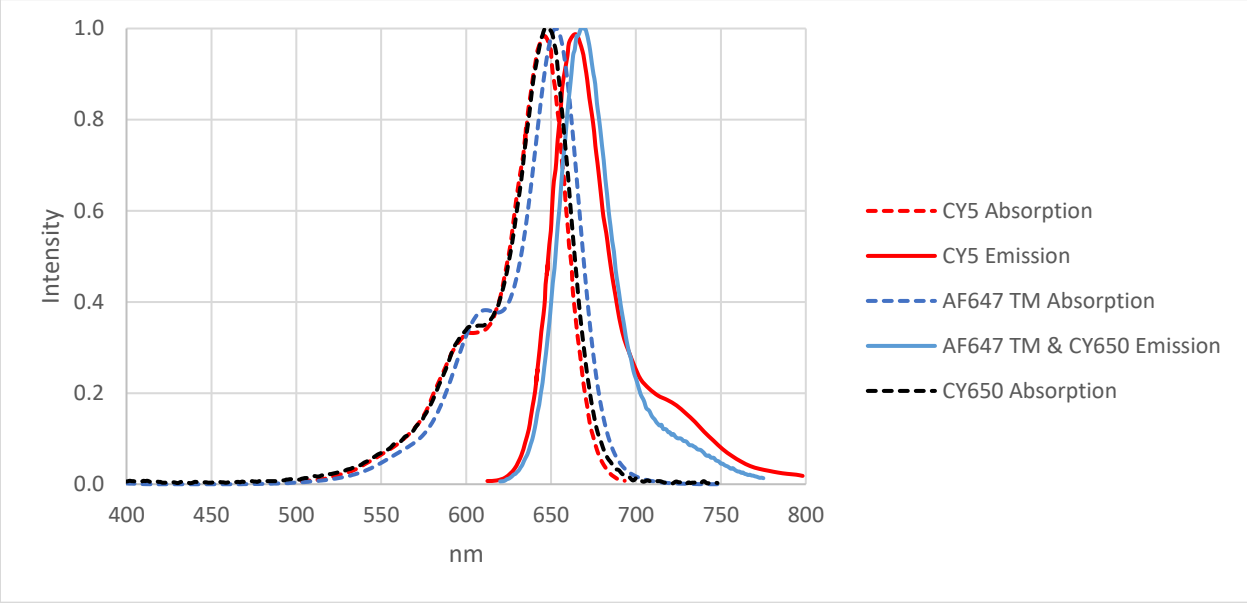
Cy 5 acid



Cyanine 650 acid



BP Fluor 647 acid



Protocol

--- general protocol dye NHS antibody labeling kit
--- general protocol dye maleimide antibody labeling kit

Application

FC, ICFC, IHC-F, IHC-P, ICC, IF, 3-DIHC, IHC, WB

Other Forms Related Available

All these dyes have click chemistry format available for order. Click reaction normally occurs in different pairs (i.e. DBCO/azide, azide/alkyne, Tz/TCO) and they are chemo-selective, easy to perform, high yields. Customers can order their pairs based on the application and hydrophilicity needed.

Reaction type		Part number
Click chemistry 1	Dye Azide	BP-23372; BP-22483; BP-22324; BP-23372; BP-22134; BP-22325
	R-PEG- alkyne	See alkyne- PEG- NHS, alkyne- PEG- mal,
Click chemistry 2	Dye alkyne	BP-22459; BP-22532; BP-22958; BP-23000; BP-23009; BP-23023; BP-23017; BP-23001
	R-PEG- azide	See azide - PEG- NHS, azide- PEG- mal,

Click chemistry 3	Dye-TCO	BP-22424
	R-PEG-Tz	See Mal-PEG-Tz; See NHS-PEG-Tz
Click chemistry 4	Dye-Tz	BP-22941; BP-22442
	R-PEG-TCO	See Mal-PEG-TCO; See NHS-PEG-TCO
Click chemistry 5	Mal-Dye-Azide	BP-23032
	Alkyne- PEG-NHS, alkyne-PEG-Mal	See Alkyne- PEG-NHS, alkyne-PEG-Mal
Click chemistry 6	NHS-Dye-Azide	BP-23028
	Alkyne-PEG-NHS, alkyne-PEG- Mal	See Alkyne- PEG-NHS, alkyne-PEG-Mal

FAQ

Q: Which laser is best for these three 650 dyes?
A: Krypton/ Argon-Laser (647 nm) or a Helium/Neon-Laser (633 nm) or with red diode laser (650nm), all three lasers are s mostly used in laser confocal microscopy.

Q: What is the advantage?
A: The three dye conjugates are extreme photostability, very low tendency to self-quenching of fluorescence by attachment to proteins, the fluorescence intensity is insensitive to variations in pH value over a broad range (pH 4 – 10). The good water solubility of the dyes makes their conjugates resistant to precipitation and aggregation preventing problems with background staining.

Q: What the difference between of the three Cy 5, Cyanine 650, BP Fluor 647?
A: The three dyes have same dye backbone which contribute the dye properties such as absorption and emission. The dyes have same functional group but with different number of soluble groups. Cy 5 has 2 SO3Na group and Cyanine 650 and BP Fluor 647 have 3 and 4. The solubility order is BP Fluor 647> Cyanine 650 >Cy 5. All three dyes have almost identical spectral characteristics which BP Fluor 647 conjugates are much brighter because of more water solubility and less aggregation.

Q: How to choose these three dyes?
A: It depends on your application. All three dye's emission are a wide separation from that of shorter wavelength-emitting fluorophores, and can be combined with a variety of other fluorophores and are ideal for multiple labeling in confocal laser scanning microscopy based on the significant advantage of using these three dyes is the low autofluorescence of biological samples in this region of the spectrum.
BP Fluor 647 conjugates are the best choice for confocal laser microscopy and a comparable or even better alternative for APC conjugates for flow cytometry where secondary antibodies emitting in the near-infrared region of the spectrum are needed.
For flow cytometry, the customers prefer BP Fluor 647 conjugates based on its brightness, cost, size (MW: BF 647 1300; APC 104K), especially its smaller size makes them more suitable for the staining of intracellular antigens in flow cytometry