Antibodies Conjugated to Fluorophores

Fluorophores

We offer a wide range of antibodies conjugated to the most commonly used fluorophores. In addition to FITC, PE, and APC, we also offer Alexa Fluor and DyLight conjugates in an array of colors, both with outstanding spectral properties.

If we don't have the labeled version you are seeking, we offer easy-to-use LYNX Rapid Conjugation Kits® for many popular dyes and tandem conjugates and ReadiLink Antibody Conjugation Kits for flow cytometry optimized fluorophores.

Single Dyes

Fluorophore	Fluorescence Color	Maximum Excitation (nm)	Maximum Emission (nm)	Relative Brightness	Spectrally Similar Dyes
DyLight 405		400	420	3	Alexa Fluor 405, Cascade Blue
Alexa Fluor 405		401	421	3	
Pacific Blue		410	455	1	
DyLight 488		493	518	4	Alexa Fluor 488, FITC
Alexa Fluor 488		495	519	3	Cy2, DyLight 488, FITC
FITC		490	525	3	Alexa Fluor 488, Cy2, DyLight 488
DyLight 550		562	576	4	Alexa Fluor 546, Alexa Fluor 555, Cy3, TRITC
PE		496, 546	578	5	
hFab™ Rhodamine*		530	580	3	
Texas Red		596	615	2	
APC		650	661	4	Alexa Fluor 647, Cy5
Alexa Fluor 647		650	665	4	APC, Cy5, DyLight 650
Cy5		649	670	3	
DyLight 650		654	673	4	Alexa Fluor 647, Cy5
PerCP		490	675	2	
StarBright™ Blue 700*		470	700	5	
DyLight 680		692	712	4	Alexa Fluor 680, Cy5.5
Alexa Fluor 700	Infrared	702	723	2	
DyLight 755	Infrared	752	778	4	Alexa Fluor 750
DyLight 800*	Infrared	777	794	4	IR Dye 800

* Western blot tested

Tandem Dyes for Flow Cytometry

When designing panels of eight or more colors, tandem dyes, such as APC-Cy7, have to be included. This is due to both laser excitation and single fluorophore limitations, which make it necessary for a single laser to excite the maximum number of fluorophores possible.

Tandem dyes, as the name implies, consist of two different covalently attached fluorophores (a donor and an acceptor molecule). With regards to spectral properties, the tandem dye has the excitation characteristics of the donor fluorophores and the emission characteristics of the acceptor molecule. These properties are due to Förster resonance energy transfer (FRET; also known as fluorescence resonance energy transfer); a process in which energy is passed on from an excited donor to a nearby acceptor molecule, which then emits a photon of light.

For tandem dyes the following guidelines should be followed:

- Tandem dyes are highly susceptible to photobleaching and therefore need to be protected from light at all times
- Tandem dye antibody conjugates should never be frozen. Freezing might result in denaturing of the donor fluorophore and thereby no or reduced staining
- The brightness of tandem dyes might be reduced by a fixation or permeabilization step. If fixation or permeabilization is required, the duration should be as short as possible
- Tandem dyes have a high batch-to-batch variation and therefore each batch has to be re-optimized. Tandem dyes are highly variable between different suppliers

Fluorophore	Fluorescence Color	Maximum Excitation (nm)	Maximum Emission (nm)	Relative Brightness	Spectrally Similar Dyes
PE-Alexa Fluor 647		496, 546	667	4	
PE-Cy5		496, 546	667	5	
PerCP-Cy5.5		490	695	3	
PE-Cy5.5		496, 546	695	4	
PE-Alexa Fluor 750	Infrared	496, 546	779	4	PE-Cy7
PE-Cy7	Infrared	496, 546	785	4	PE-Alexa Fluor 750
APC-Cy7	Infrared	650	785	2	

Abbreviations: APC; allophycocyanin, FITC; fluorescein isothiocyanate, PE; phycoerythrin (Note. phycoerythrin (PE) is the same as R-phycoerythrin (RPE)), PerCP; peridinin-chlorophyll-protein complex.

Interested in learning more about flow cytometry?
We offer a range of application guides, protocols and hands-on tips and tricks.
Visit: bio-rad-antibodies.com/flow-resources

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