

Fluorophore and reagent selection guide for flow cytometry



The Invitrogen™ Attune™ NxT Flow Cytometer. For more information, go to thermofisher.com/attune

Excitation laser	Common emission filters (nm)	Attune NxT channel (nm)*	Recommended dyes	Viability dyes (compatible with fixation)	Viability dyes (unfixed cells)	DNA content/ cell cycle dyes (live cells)	DNA content/ cell cycle dyes (fixed cells)	Apoptosis dyes	Cell proliferation dyes	Reactive oxygen species (ROS) dyes	Phagocytosis dyes	Fluorescent proteins	Other dyes
UV (~350 nm)	379/28	NA											BD Horizon BUV395
	440/40 450/50	NA	Alexa Fluor 350 Alexa Fluor 405	LIVE/DEAD Fixable Blue	DAPI SYTOX Blue	Hoechst 33342 Vybrant DyeCycle Violet	FxCycle Violet (DAPI)	Annexin V, Alexa Fluor 350 Annexin V, Pacific Blue	CellTrace Blue Click-IT Plus Edu Alexa Fluor 350			ECFP	BD Horizon BUV496
	740/35	NA											BD Horizon BUV737
Violet (405 nm)	425/20 440/50 450/50 455/50 450/65 460/50	VL1 440/50 VL1(V6**) 450/40	Super Bright 436 eFluor 450 Pacific Blue Alexa Fluor 405	LIVE/DEAD Fixable Violet	DAPI SYTOX Blue	Vybrant DyeCycle Violet	FxCycle Violet	Annexin V, Pacific Blue Annexin V, eFluor 450 PO-PRO-1	CellTrace Violet Click-IT Plus Edu Pacific Blue			Azurite Cerulean TagBFP ECFP mTurquoise AmCyan	BD Horizon BV421 BD Horizon V450 VioBlue
	510/50 520/35 525/50 530/40 550/40	VL2 512/25 VL2(V6) 525/50	eFluor 506 Pacific Green	LIVE/DEAD Fixable Aqua				Violet Ratiometric Probe (F2N12S)				T-Sapphire	BD Horizon BV510 BD Horizon V500 VioGreen
	585/40 610/20	VL3 603/48 VL3(V6) 610/20	Super Bright 600 Pacific Orange Qdot 605	LIVE/DEAD Fixable Yellow					Violet Ratiometric Probe (F2N12S)				BD Horizon BV570 BD Horizon BV605 BD Horizon BV650
	660/20 660/40 710/50	VL4 710/50 VL4(V6) 660/20	Super Bright 645 Super Bright 702 Qdot 705										BD Horizon BV650 BD Horizon BV711
	710/50	VL5 710/50	Super Bright 702										BD Horizon BV711
	780/60	VL6 780/60	Super Bright 780										BD Horizon BV786
	Blue (488 nm)	525/50 525/30 525/40 530/30 530/40	BL1 530/30 BL1(G†) 525/50	Alexa Fluor 488 FITC	LIVE/DEAD Fixable Green	SYTOX Green	Vybrant DyeCycle Green		Annexin V, Alexa Fluor 488 Annexin V, FITC APO-BrdU TUNEL with Alexa Fluor 488 CellEvent Caspase-3/7 Green MitoProbe DiOC ₂ (3) MitoProbe JC-1 YO-PRO-1 Iodide	CellTrace CFSE Click-IT Plus Edu Alexa Fluor 488	CellROX Green	pHrodo Green <i>E. coli</i> BioParticles Conjugate pHrodo Green <i>S. aureus</i> BioParticles Conjugate	EGFP Emerald GFP EYFP
574/26 575/30 580/23 585/40 586/15 590/40		BL2 574/26 BL2(G,Y‡) 590/40	PE PE-eFluor 610 PE-Alexa Fluor 610 PE-Texas Red	LIVE/DEAD Fixable Red	7-AAD Propidium Iodide (PI) SYTOX AADvanced SYTOX Orange	Vybrant DyeCycle Orange	FxCycle PI/RNase	Annexin V, PE TMRE TMRM MitoProbe JC-1			pHrodo Red <i>E. coli</i> BioParticles Conjugate pHrodo Red Phagocytosis Kit	EYFP mCitrine Venus	BD Horizon PE-CF594 PE/Dazzle 594
670/30 675/30 680/30 695/30 695/40 710/50		BL3 695/40	PerCP-eFluor 710 PE-Alexa Fluor 700 PE-Cy [®] 5.5 PerCP PerCP-Cy [®] 5.5 Qdot 705 TRI-COLOR (PE-Cy [®] 5)		7-AAD Propidium Iodide SYTOX AADvanced			Annexin V, PerCP-eFluor 710					PerCP-Vio700
750 LP 775/50 780/40 780/60		BL4 780/60	PE-Cy [®] 7 Qdot 800			Vybrant DyeCycle Ruby		Annexin V, PerCP-eFluor 710					PE-Vio770
Green (532 nm)		555/20 575/24 585/16 585/42 610/20	GL1 575/36	Alexa Fluor 532 Alexa Fluor 555 Qdot 565 Qdot 605 R-phycoerythrin (R-PE, PE)		SYTOX Orange	Vybrant DyeCycle Orange		Annexin V, R-PE Annexin V, Alexa Fluor 555 MitoTracker Orange CMTMRos	CellTrace Yellow	CellROX Orange	pHrodo Red <i>E. coli</i> BioParticles Conjugate	DsRed tdTomato YFP
	610/20 620/15 630/30	GL2 620/15	Alexa Fluor 568 Alexa Fluor 594 Qdot 605 PE-Texas Red	LIVE/DEAD Fixable Red	SYTOX AADvanced Propidium Iodide	Vybrant DyeCycle Orange	FxCycle PI/RNase	Annexin V, Alexa Fluor 568 Annexin V, Alexa Fluor 594 MitoTracker Red CMXRos	Click-IT Plus Edu Alexa Fluor 594			mCherry	PE/Dazzle 594
	695/40 710/50	GL3 695/40	PE-Alexa Fluor 700 TRI-COLOR PE-Cy [®] 5.5		SYTOX AADvanced	Vybrant DyeCycle Ruby							
	780/60	GL4 780/60	Qdot 800 PE-Cy [®] 7										
Yellow (561 nm)	585/40 585/15 590/40	YL1 585/16	Alexa Fluor 555 PE		Propidium Iodide SYTOX Orange	Vybrant DyeCycle Orange		MitoTracker Orange CMTMRos MitoTracker Red CMXRos TMRE TMRM	CellTrace Yellow	CellROX Orange	pHrodo Red <i>E. coli</i> BioParticles Conjugate	mOrange RFP	
	610/20 613/20 615/50 620/15 620/30	YL2 620/15	PE-eFluor 610 PE-Alexa Fluor 610 PE-Texas Red	LIVE/DEAD Fixable Red	7-AAD Propidium Iodide SYTOX AADvanced SYTOX Orange	Vybrant DyeCycle Orange	FxCycle PI/RNase	Annexin V, Alexa Fluor 568 Annexin V, Alexa Fluor 594	Click-IT Plus Edu Alexa Fluor 594			DsRed mCherry mKate mStrawberry tdTomato	ECD BD Horizon PE-CF594 PE/Dazzle 594 PE-Vio 615
	670/30 675/30 680/30 695/30 695/40	YL3 695/40 YL3(B§/Y/R††/V6) 780/60	PE-Alexa Fluor 700 PE-Cy [®] 5.5 Qdot 705 TRI-COLOR		7-AAD Propidium Iodide SYTOX AADvanced							mPlum mRaspberry mNeptune	
	750 LP 780/40 780/60	YL4 780/60	PE-Cy [®] 7 Qdot 800			Vybrant DyeCycle Ruby							PE-Vio770
Red (637 nm)	660/20 661/20 665/20 670/14 670/30 675/30	RL1 670/14	Alexa Fluor 647 eFluor 660 APC Qdot 655 APC-Cy [®] 5	LIVE/DEAD Fixable Far Red	SYTOX Red		FxCycle Far Red	Annexin V, Alexa Fluor 647 Annexin V, Alexa Fluor 680 Annexin V, APC MitoProbe DiIC ₁ (5) TO-PRO-3	CellTrace Far Red Click-IT Plus Edu Alexa Fluor 647	CellROX Deep Red			
	720/30 730/45	RL2 720/30	Alexa Fluor 680 Alexa Fluor 700 APC-Alexa Fluor 750 Qdot 705										
	750 LP 775/50 780/40 780/60	RL3 780/60	APC-eFluor 780 APC-Alexa Fluor 750 APC-Cy [®] 7	LIVE/DEAD Fixable Near-IR		Vybrant DyeCycle Ruby							BD APC-H7 APC-Vio770

* Filter sets change depending on the configuration of the Attune NxT Flow Cytometer in use. ** V6 is the Attune NxT violet 6-channel configuration option. † G refers to the green laser option. ‡ Y refers to the yellow laser option. § B refers to the blue laser option. †† R refers to the red laser option.

To find out about Invitrogen™ antibodies, assays, and instruments for flow cytometry, go to thermofisher.com/flowcytometry