Fluorescent Probes

Achieve the versatility, sensitivity, and quantitative capabilities you need in your research with Cayman's diverse library of more than 500 fluorescent probes. We offer a range of probes to detect intracellular events, protein interactions, a host of enzyme substrates, and many other significant targets. Use this at-a-glance guide to select the most appropriate fluorochromes for your experiment.

Cell Viability & Cell Proliferation

Item No.	Product Name	Detects	Cell Permeable?	Excitation Maximum (nm)	Emission Maximum (nm)
11397	7-Aminoactinomycin D	DNA; non-viable cells	✗	488, 546, 578	650
14948	Calcein AM*	cell viability	✓	494	517
20637	Calcein Blue AM*	cell viability	✓	360	445
20632	Calcein Red™ AM*	cell viability	✓	560	574
20639	Calcein UltraBlue™ AM*	cell viability *(higher photostability and stronger fluorescence intensity at physiological pH than Calcein Blue)*	✓	360	445
14456	CFDA-SE	cell proliferation	✓	491	518
20698	CytoTrace™ Red CMTPX	cell division; cell tracking	✓	577	602
35701	Fluorescein diacetate	cell viability	✓	490	520
19583	Green CMFDA	cell division; cell tracking	✓	492	517
15003	JC-1	mitochondrial integrity; apoptosis	✓	485 (monomer) 520-570 (aggregate)	535 (monomer) 570-610 (aggregate)
14289	Propidium Iodide	DNA; RNA; non-viable cells	✗	488-535	617
14322	Resazurin (sodium salt)	enzyme activity; cell viability	✓	570	580
21426	Tetramethylrhodamine ethyl ester (perchlorate)	mitochondrial function; cell viability	✓	550	575

**Also available: membrane-impermeable non-AM forms*
View a complete list of cell viability fluorescent probes at www.caymanchem.com

Nucleic Acids

Item No.	Product Name	Detects	Cell Permeable?	Excitation Maximum (nm)	Emission Maximum (nm)
14338	Acridine Orange	Nucleic acids; pH	✓	502 (dsDNA) 460 (ssDNA and RNA) 475 (low pH)	525 (dsDNA) 650 (ssDNA and RNA) 590 (low pH)
22439	9-Amino-6-chloro-2-methoxyacridine	DNA and pH gradients; poly(dA-dT) sequences of DNA	✓	411	475
11315	Chromomycin A_3	DNA (two or more contiguous GC base pairs)	✗	445	575
14285	DAPI (hydrochloride)	DNA (AT-rich sequences)	✗	358	461
15547	Hoechst 33342 (hydrochloride)	DNA (AT-rich sequences); nuclear marker	✓	350	461
14488	Pyronin Y	dsRNA	✓	540-550	560-580

View a complete list of DNA fluorescent probes at www.caymanchem.com

Oxidative Stress & Reactive Species

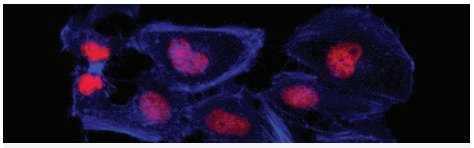
Item No.	Product Name	Detects	Excitation Maximum (nm)	Emission Maximum (nm)
10157	APF	hydroxyl radical; hypochlorite ion; certain peroxidase intermediates	490	515
27086	C11 BODIPY 581/591	lipid oxidation	/ 581/500 (oxidized)	/ 591/510 (oxidized)
14051	Coumarin Boronic Acid	peroxynitrite; hypochlorous acid; hydrogen peroxide	332	470
19111	Coumarin hydrazine	reactive carbonyl groups	365	/ 430/550 (upon reaction with carbonyls)
85165	DAF-2 diacetate	nitric oxide	485	538
18767	DAF-FM diacetate	nitric oxide	495	515
85155	2,7-Dichlorodihydrofluorescein diacetate	peroxynitrite formation	502	523
12013	Dihydroethidium	superoxide	490	590
85100	Dihydrorhodamine 123	peroxynitrite formation	500	536
62237	DPPP	hydroperoxides; low-density lipoprotein; cellular oxidation	351	380
34564	7-Fluoro-2,1,3-benzoxadiazole-4-sulfonate (ammonium salt)	thiols	380	515
14872	Lucigenin	superoxide; chloride	455	505
16803	Luminol	peroxidation; iron; gold; cyanide	355	411
17097	Monobromobimane	reactive sulfur; thiol groups	398	490
10005983	Pentafluorobenzenesulfonyl fluorescein	hydrogen peroxide	- 465-505	- 505-555
16929	WSP-5	hydrogen sulfide	502	525

View a complete list of fluorescent probes for oxidative stress and reactive species detection at www.caymanchem.com

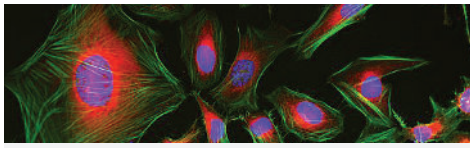
Cytoskeletal Proteins

Item No.	Product Name	Detects	Excitation Maximum (nm)	Emission Maximum (nm)
21016	9-(2,2-Dicyanovinyl)julolidine	tubulin and other cytoskeletal proteins	450	480 (low viscosity solvents) 505 (high viscosity solvents)
20546	Phalloidin-California Red™ Conjugate	F-actin	583	605
20478	Phalloidin-Fluorescein Conjugate	F-actin	492	518
20547	Phalloidin-iFluor™ 350 Conjugate	F-actin	353	442
20548	Phalloidin-iFluor™ 405 Conjugate	F-actin	400	421
20549	Phalloidin-iFluor™ 488 Conjugate	F-actin	493	517
20552	Phalloidin-iFluor™ 555 Conjugate	F-actin	556	574
20553	Phalloidin-iFluor™ 594 Conjugate	F-actin	590	618
20554	Phalloidin-iFluor™ 633 Conjugate	F-actin	634	649
20555	Phalloidin-iFluor™ 647 Conjugate	F-actin	650	665
20545	Phalloidin-Tetramethylrhodamine Conjugate	F-actin	546	575

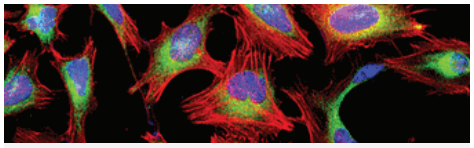
View a complete list of cytoskeletal protein fluorescent probes at www.caymanchem.com



Actin filaments stained with Phalloidin-iFluor™ 350 Conjugate



HeLa cells stained with Phalloidin-iFluor™ 488 Conjugate



HeLa cells labeled with Phalloidin-iFluor™ 594 Conjugate

Protease Substrates

Item No.	Product Name	Detects	Excitation Maximum (nm)	Emission Maximum (nm)
9002021	Abz-Val-Ala-Asp-Nva-Arg-Asp-Arg-Gln-EDDnp (trifluoroacetate salt)	human proteinase 3 activity	320	420
26640	Ac-ANW-AMC	β5i/LMP7 subunit of the 20S immunoproteasome activity	340-360	440-460
14986	Ac-DEVD-AMC	caspase-3 activity	340-360	440-460
17051	Ac-LEHD-AFC (trifluoroacetate salt)	caspase-4, -5, and -9 activity	400	505
14991	Ac-LETD-AFC	caspase-8 activity	400	505
14988	Ac-VDVAD-AFC	caspase-2 activity	400	505
14992	Ac-WEHD-AFC (trifluoroacetate salt)	caspase-1, -4, and -5 activity	400	505
17591	Ac-YVAD-AFC	caspase-1 and -4 activity	400	505
27580	Gly-Arg-AMC (hydrochloride)	cathepsin C activity	340-360	440-460
14907	MeOSuc-Ala-Ala-Pro-Val-AMC	human leukocyte and porcine pancreatic elastase activity	355-380	440-460
10008119	Suc-Leu-Leu-Val-Tyr-AMC	20S proteasome, chymotrypsin-like proteases, and calpain activity	360	460
11675	(Z-Ala-Ala-Ala-Ala)2Rh110	elastase activity	485	525
10008117	Z-LLE-AMC	caspase-like activity of the 26S proteasome or 20S proteolytic core	340-360	440-460

View a complete list of protease activity fluorescent probes at www.caymanchem.com

Additional Enzyme Substrates

Item No.	Product Name	Detects	Excitation Maximum (nm)	Emission Maximum (nm)
62910	7-hydroxycoumarinyl Arachidonate	$cPLA_2$ activity	335	450
25583	C_{12}FDG	β-galactosidase activity	485	530
35500	DiFMUP	phosphatase activity	358	455
16551	4-Methylumbelliferyl-α-D-Galactopyranoside	α-galactosidase activity	330 (pH 4.6); 370 (pH 7.4); 385 (pH 10.4)	445-454
20948	4-Methylumbelliferyl-β-D-Glucopyranoside	β-glucosidase and β-glucocerebrosidase activity	330 (pH 4.6); 370 (pH 7.4); 385 (pH 10.4)	445-454
19543	4-Methylumbelliferyl-α-L-Iduronide (free acid)	α-L-iduronidase activity	320 (pH 1.97-6.72); 360 (pH 7.12-10.3)	445-455 (increases as pH decreases)
19524	4-Methylumbelliferyl 6-thio-Palmitate-β-D-Glucopyranoside	palmitoyl-protein thioesterase (PPT/CLN1) activity	320 (pH 1.97-6.72); 360 (pH 7.12-10.3)	445-455 (increases as pH decreases)

View a complete list of enzyme substrate fluorescent probes at www.caymanchem.com

Protein Interactions

Item No.	Product Name	Detects	Excitation Maximum (nm)	Emission Maximum (nm)
20672	3-BODIPY-propanoylaminocaproic Acid N-hydroxysuccinimide ester	proteins immobilized on PVDF membranes	300-360, 504	511
20704	FlAsH-EDT_2	proteins with a tetracysteine sequence	508	528
19767	ReAsH-EDT_2	proteins with a tetracysteine sequence	593	608

View a complete list of probes to detect protein interactions at www.caymanchem.com

Fluorescent Probe Labeling Chemistry

Explore the physicochemical properties of fluorophores derived from fluorescein, rhodamine, coumarin, and more.

Read the article at **www.caymanchem.com/probe-chem**

Calcium

Item No.	Product Name	Detects	Cell Permeable?	Excitation Maximum (nm)	Emission Maximum (nm)
20424	BTC AM*	intracellular calcium (low affinity)	✓	/ 401 (Ca^{2+}-bound) / 480	529
35758	Fluo-2 AM*	intracellular calcium	✓	490	515
14960	Fluo-3 AM*	intracellular calcium	✓	488	526
31143	Fluo-4 AM*	intracellular calcium	✓	490	520
14591	Fura-2 AM*	intracellular calcium	✓	380 (low [Ca^{2+}]) 340 (high [Ca^{2+}])	510
34993	Fura-2 Leakage Resistant AM*	intracellular calcium	✓	340 (Ca^{2+}-bound) 380 (Ca^{2+}-free)	505
20416	Fura-FF AM*	intracellular calcium (low affinity)	✓	365 (no Ca^{2+}) 339 (high [Ca^{2+}])	514 (no Ca^{2+}) 507 (high [Ca^{2+}])
34985	ICR-1 AM*	intracellular calcium	✓	580	660
20417	Indo-1 AM*	intracellular calcium	✓	349-364	475-485 (no Ca^{2+}) 400-410 (Ca^{2+}-bound)
20442	Rhod-5N AM*	intracellular calcium (low affinity)	✓	551	576
20444	Rhod-FF AM*	intracellular calcium (low affinity)	✓	552	580

**Also available: membrane-impermeable non-AM forms*
View a complete list of calcium fluorescent probes at www.caymanchem.com

pH

Item No.	Product Name	Detects	Cell Permeable?	Excitation Maximum (nm)	Emission Maximum (nm)
17183	BCECF	pH	✗	/ 440 / 490	535
15922	BCECF AM	intracellular pH	✓	/ 440 / 490	535