biotium Glowing products for science

Call us : 800-304-5357

CF® Dye DBCO

CF® Dye with dibenzocyclooctyne (i.e., DBCO, ADIBO) reacts with azide via copper-free click chemistry by strain-promoted azide-alkyne cycloaddition (SPAAC).



Product attributes

Storage Conditions	Store at -10 to -35 °C
Chemical reactivity (reacts with)	Azides/Picolyl azides

Product Description

CF® Dye DBCO (Dibenzocyclooctyne) derivatives are highly efficient, fast-reacting alternatives to fluorescently labeled BCN and DIBO. These DBCO derivatives are specifically designed for copper-free click chemistry, reacting more rapidly with azide groups than other cyclooctynes through strain-promoted azide-alkyne cycloaddition (SPAAC). Unlike traditional click reactions, DBCO-azide reactions do not require toxic copper catalysts (CuAAC), making them more suitable for live-cell or *in vivo* experiments. CF® Dye DBCO is available in 14 derivatives.

- Fluorescent labeling of azide groups on target molecules
- Time-saving alternative to fluorescently labeled DIBO and BCN
- Suitable for labeling cell extracts or live cells without copper toxicity issues
- Wide selection of bright, photostable, and water-soluble CF® Dyes

DBCO dyes are useful for bioorthogonal reactions in combination with trans-cyclooctenes (TCO) and tetrazine chemistries, because DBCO does not interact with tetrazines unlike other cyclooctynes. DBCO conjugation reactions can be performed in aqueous buffers or in organic solvents, depending on the properties of the substrate molecules.

Superior CF® Dyes

Biotium offers a wide selection of CF® Dyes with the DBCO reactive group. Our outstanding series of CF® Dyes offer superior brightness, photostability, and signal-to-noise when compared to compared to other fluorescent dyes. Learn more about CF® Dyes.

CF® Dye DBCO

Product	Ex/Em	MW	Size	Catalog No.	Dye Features
CF®405M	416/452 nm	859	1 mg	96110	CF®405M Features
CF®405S	411/431 nm	927	1 mg	96111	CF®405S Features
CF®488A	490/516 nm	1271	1 mg	96112	CF®488A Features
CF®555	554/568 nm	1317	1 mg	96113	CF®555 Features
CF®568	562/584 nm	1071	1 mg	96114	CF®568 Features
CF®594	593/615 nm	1086	1 mg	96115	CF®594 Features
CF®640R	642/663 nm	1189	1 mg	96116	CF®640R Features
CF®647	652/668 nm	1343	1 mg	96117	CF®647 Features
CF®660R	662/682 nm	1246	1 mg	96118	CF®660R Features
CF®680	681/698 nm	3510	1 mg	96119	CF®680 Features
CF®680R	680/701 nm	1270	1 mg	96120	CF®680 Features
CF®700	696/721 nm	3189	1 mg	96121	CF®700 Features
CF®740	742/767 nm	1244	1 mg	96122	CF®740 Features
CF®750	755/779 nm	3278	1 mg	96123	CF®750 Features

Use our Protein DOL Calculator

CF® Dye Technical Data

Dye	Abs/Em (nm)	MW (free acid form)	Sephadex® media[1]	Amax (nm)	Cf A260/Amax	Cf A280/Amax	ε^2	Optimal DOL (IgG)
CF®350	355/450	~496	G-25	347	0.13	0.14	18,000	4-6
CF®405S	411/431	~1169	G-25	404	0.19	0.7	33,000	3-5
CF®405M	416/452	~503	G-25	408	0.24	0.13	41,000	4-6
CF®405L	413/547	~1573	G-25	395	N/A	0.5	24,000	8-12
CF®410	404/455	~242	G-25	416	0.15	0.2	46,000	5-7
CF®430	424/497	~429	G-25	426	0.21	0.044	40,000	5-8
CF®440	433/512	~479	G-25	440	0.303	0.139	40,000	5-8
CF®450	448/533	~689	G-25	450	0.205	0.2	40,000	5-8
CF®488A	490/516	~914	G-25	490	0.16	0.1	70,000	7-9
CF®503R	503/532	~1100	G-25	503	0.21	0.09	90,000	4-10
CF®505	505/519	~587	G-25	505	0.22	0.09	90,000	4-8
CF®510	513/537	~562	G-25	513	0.25	0.14	90,000	3-5
CF®514	516/549	~1216	G-25	516	0.14	0.073	105,000	5-8

Dye	Abs/Em (nm)	MW (free acid form)	Sephadex® media[1]	Amax (nm)	Cf A260/Amax	Cf A280/Amax	ε[2]	Optimal DOL (IgG)
CF®532	531/552	~685	G-25	527	0.11	0.06	96,000	4-7
CF®543	543/563	~887	G-25	541	0.305	0.095	100,000	4-7
CF®550R	551/577	~686	G-25	551	0.12	0.08	100,000	5-6
CF®555	554/568	~959	G-25	555	0.026	0.08	150,000	4-5, 3-6*
CF®568	562/584	~714	G-25	562	0.17	0.08	100,000	5-6
CF®570	568/592	~2998	G-25	568	0.0998	0.1	150,000	5-6
CF®583	584/606	~3127	G-75	583	0.139	0.223	150,000	5-6
CF®583R	585/609	~773	G-25	585	0.19	0.08	100,000	5-6
CF®594	593/615	~729	G-25	593	0.24	0.08	115,000	4-7
CF®597R	597/619	~800	G-25	597	0.25	0.08	100,000	5-6
CF®620R	620/643	~738	G-25	617	0.28	0.45	115,000	5-6
CF®633	629/650	~821	G-25	630	0.25	0.48	100,000	4-7
CF®640R	642/663	~832	G-50	642	0.23	0.44	105,000	4-7
CF®647	652/668	~985	G-25	650	0.01	0.03	240,000	4-5, 3-6*
CF®660C	667/685	~3024	G-75	667	0.05	0.08	200,000	3-6, 2-3*
CF®660R	662/682	~888	G-25	663	0.2	0.51	100,000	4-7
CF®680	681/698	~3153	G-75	681	0.06	0.09	210,000	3-5, 2-3*
CF®680R	680/701	~912	G-25	680	0.155	0.32	140,000	5-6
CF®700	696/721	~2474	G-75	696	0.055	0.06	240,000	3-6
CF®710	713/735	~860	G-25	712	0.11	0.07	115,000	5-6
CF®725	729/750	~890	G-25	729	0.11	0.07	120,000	5-6
CF®740	742/767	~900	G-25	742	0.132	0.08	105,000	5-6
CF®750	755/779	~2921	G-75	755	0.01	0.03	250,000	3-5, 2-3*
CF®770	770/797	~3091	G-75	770	0.041	0.06	220,000	3-5, 2-3*
CF®790	783/808	~3179	G-75	784	0.104	0.07	210,000	3-5
CF®800	797/817	~3334	G-75	797	0.09	0.08	210,000	3-5
CF®820	822/835	~2711	G-75	822	0.0459	0.07	253,000	3-6
CF®850	852/870	~2787	G-75	852	N/A	0.06	240,000	3-6
CF®870	876/896	~2773	G-75	877	N/A	0.06	240,000	3-6

1. Sephadex® media recommendations are for antibody purification, not nucleic acid.
2. Extinction Coefficient (ε).
*Suitable, but suboptimal DOL.

Sephadex is a registered trademark of Cytiva.

This datasheet was generated on November 26, 2026 at 05:03:24 PM. Visit product page to check for updated information before use.
Product link: https://biotium.com/product/cf-dye-dbco/