SaraFluor™ Series from GORYO Chemical

SaraFluor

CAT No.	New product name	Old product name	Size
ST1003-10	SaraFluor 488-NHS	STELLAFluor 488 NHS	5 nmol x 5
ST1003-11	SaraFluor 488-NHS	STELLAFluor 488 NHS	1 mg
ST1003-21	SaraFluor 488-maleimide	STELLAFluor 488 maleimide	1 mg
ST1003-31	SaraFluor 488-COOH	STELLAFluor 488 free COOH	1 mg
ST1003-41	SaraFluor 488-NH_2	STELLAFluor 488 free NH_2	1 mg
ST1006-10	SaraFluor 600-NHS	STELLAFluor 600 NHS	5 nmol x 5
ST1006-11	SaraFluor 600-NHS	STELLAFluor 600 NHS	1 mg
ST1006-21	SaraFluor 600-maleimide	STELLAFluor 600 maleimide	1 mg
ST1006-31	SaraFluor 600-COOH	STELLAFluor 600 free COOH	1 mg
ST1006-41	SaraFluor 600-NH_2	STELLAFluor 600 free NH_2	1 mg
ST1008-10	SaraFluor 650-NHS	STELLAFluor 650 NHS	5 nmol x 5
ST1008-11	SaraFluor 650-NHS	STELLAFluor 650 NHS	1 mg
ST1008-21	SaraFluor 650-maleimide	STELLAFluor 650 maleimide	1 mg
ST1008-31	SaraFluor 650-COOH	STELLAFluor 650 free COOH	1 mg
ST1008-41	SaraFluor 650-NH_2	STELLAFluor 650 free NH_2	1 mg
ST1010-10	SaraFluor 700-NHS	STELLAFluor 700 NHS	5 nmol x 5
ST1010-11	SaraFluor 700-NHS	STELLAFluor 700 NHS	1 mg
ST1010-21	SaraFluor 700-maleimide	STELLAFluor 700 maleimide	1 mg
ST1010-31	SaraFluor 700-COOH	STELLAFluor 700 free COOH	1 mg
ST1010-41	SaraFluor 700-NH_2	STELLAFluor 700 free NH_2	1 mg
ST1011-10	SaraFluor 720-NHS	STELLAFluor 720 NHS	5 nmol x 5
ST1011-11	SaraFluor 720-NHS	STELLAFluor 720 NHS	1 mg
ST1011-21	SaraFluor 700-maleimide	STELLAFluor 720 maleimide	1 mg
ST1011-31	SaraFluor 700-COOH	STELLAFluor 720 free COOH	1 mg
ST1011-41	SaraFluor 700-NH_2	STELLAFluor 720 free NH_2	1 mg

※We also have large capacity products (5 mg, 10 mg), so please do not hesitate to contact us.

SaraFluor B

CAT No.	New product name	Old product name	Size
A201-01	HaloTag® SaraFluor 650B Ligand	HMSiR-Halo	15 nmol
A201-02	HaloTag® SaraFluor 650B Ligand	HMSiR-Halo	30 nmol
A202-01	SaraFluor 650B goat anti-mouse IgG	HMSiR labeled Goat anti-mouse IgG (whole)	100 µg
A203-01	SaraFluor 650B goat anti-rat IgG	HMSiR labeled Goat anti-rat IgG (whole)	100 µg
A204-01	SaraFluor 650B goat anti-rabbit IgG	HMSiR labeled Goat anti-rabbit IgG (whole)	100 µg
A208-01	SaraFluor 650B-NHS	HMSiR-NHS	100 µg
A209-01	SaraFluor 650B-maleimide	HMSiR-Maleimide	100 µg
A218-01	SaraFluor 488B-NHS	New product	100 µg

SaraFluor T

CAT No.	New product name	Old product name	Size
A308-01	HaloTag® SaraFluor 650T Ligand	HaloTag® STELLA Fluor 650 Ligand	30 nmol
A308-02	HaloTag® SaraFluor 650T Ligand	HaloTag® STELLA Fluor 650 Ligand	60 nmol

References

SaraFluor B
※ SaraFluor™ B corresponds to HMSiR in the references.
S. Uno, M. Kamiya, A. Morozumi, Y. Urano (2018) *Chem. Commun.* **54**:102-105 DOI: 10.1039/c7cc07783a

F-C. Chien, C-Y, Linb, G. Abrigo (2018) *Phys. Chem. Chem. Phys.* **20**:27245-27255 DOI:10.1039/C8CP02942C

S. Uno, M. Kamiya, T. Yoshihara, K. Sugawara, K. Okabe, M. C. Tarhan, H. Fujita, T. Funatsu, Y. Okada, S. Tobita, Y. Urano (2014) *Nat. Chem.* **6**:681-689 DOI: 10.1038/NCHEM.2002

SaraFluor T
※ SaraFluor™ 650T corresponds to STELLA Fluor 650 (SF650) in the references.
M. Yanagawa, M. Hiroshima, Y. Togashi, M. Abe, T. Yamashita, Y. Shichida, M. Murata, M. Ueda, Y. Sako (2018) *Sci. Signal.* **11**: eaao1917 DOI:10.1126/scisignal.aao1917

G. Lukinavičius, K. Umezawa, N. Olivier, A. Honigmann, G. Yang, T. Plass, V. Mueller, L. Reymond, I. R. Corrêa Jr., Z. G. Luo, C. Schultz, E. A. Lemke, P. Heppenstall, C. Eggeling, S. Manley, K. Johnsson (2013) *Nat. Chem.* **5**: 132-139 DOI:10.1038/nchem.1546

GORYO CHEMICAL

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Distributor

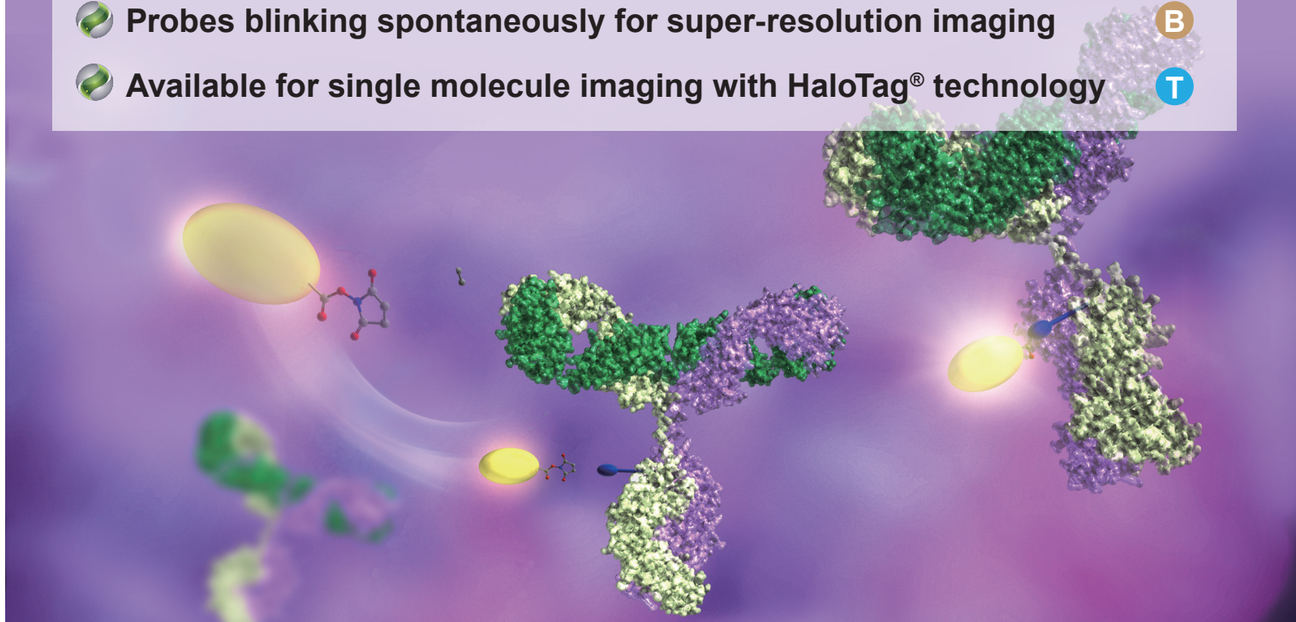
FL0080GR 2019/02

GORYO CHEMICAL

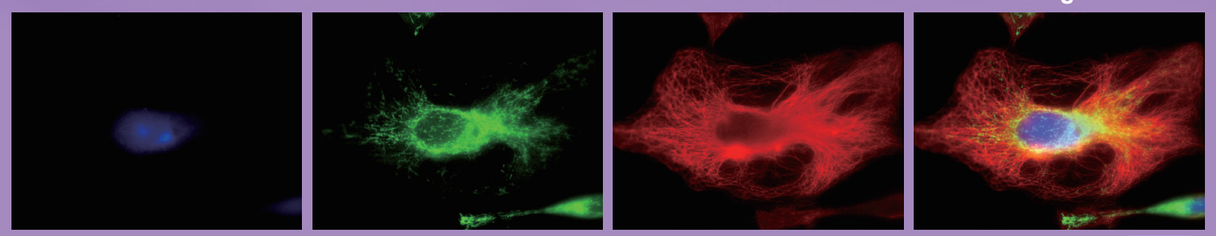
Fluorophores for Protein Labeling

SaraFluor™ Series

- Proteins such as antibodies can be labeled simply by mixing (S) (B)
- Probes blinking spontaneously for super-resolution imaging (B)
- Available for single molecule imaging with HaloTag® technology (T)



GORYO Chemical's fluorophores for labeling, STELLA Fluor Series and Super Fluor Series were integrated into **SaraFluor Series** and renamed. "Sara" means "bright" in the native Ainu of Hokkaido. Your wishes are to be such pigment that lightens your research brightly.



Multicolor imaging of fixed HeLa cell using SaraFluor labeled antibody

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SaraFluor™ Series, fluorophores for labeling from GORYO Chemical

SaraFluor™ for general labeling protein and other molecules

- **Wide wavelength range (Green: 488 ～ NIR: 720)**
- **Excellent photostability**
- **Various reactive groups (-NHS, -maleimide, -NH_2, -COOH)**

SaraFluor series is a product line of bright fluorophores, which are suitable for labeling proteins (e.g., antibodies) and other macromolecules. These products are also used for labeling, marking or to evaluate physical properties. Among them, SaraFluor 650, 700, and 720, derivatives of silicone rhodamine, are uniquely bright and photostable fluorophores in far-red to near-infrared wavelength range.
N-hydroxysuccinimide (NHS) esters quickly form a covalent bond with primary amine just by mixing. NHS esters are widely used for labeling antibodies and macromolecules. On the other hand, maleimides which forms a covalent bond with thiols (R-SH) are used to specifically label cysteine residues. The fluorophores with amino groups (-NH_2) and carboxyl groups (-COOH) are used for labeling using crosslinkers, used as a material for chemical synthesis.

Feature 1 Wide wavelength range (Green: 488 ～ NIR: 720)

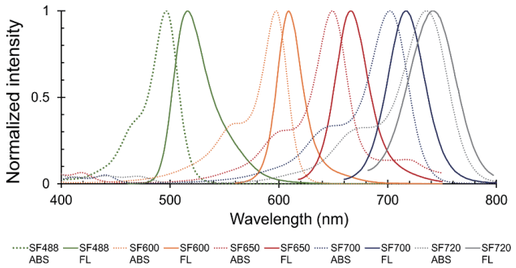


Fig.1 Spectra of SaraFluor series
(dot lines: absorption spectra, solid lines: emission spectra)

Feature 2 Excellent photostability

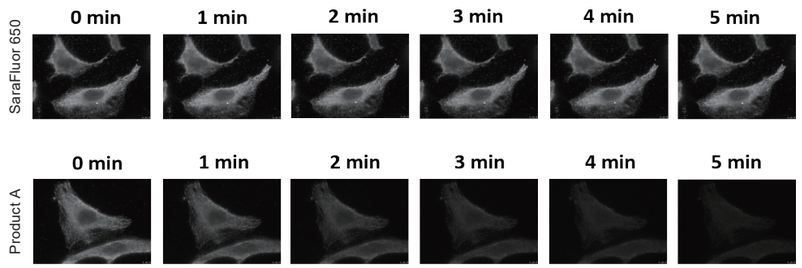


Fig.2 A comparison of photobleaching property of SaraFluor 650
Fixed cells were stained with secondary antibodies labeled with SaraFluor 650 or another corresponding fluorophore, and were observed by fluorescence microscopy. Photobleaching was observed under the same imaging conditions including light intensity, fluorescent filters, exposure, and camera gain.

Feature 3 Various reactive groups (-NHS, -maleimide, -NH_2, -COOH)

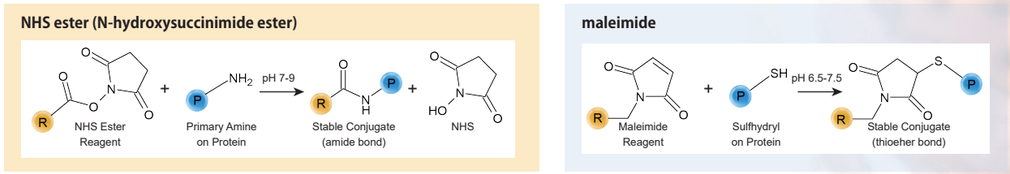


Fig.3 SaraFluor Series offers maleimide, amino (-NH_2) and carboxyl (-COOH) in addition to NHS- form (N-hydroxysuccinimide ester)
NHS esters quickly form a covalent bond with primary amine just by mixing. NHS esters are widely used for labeling antibodies and macromolecules. On the other hand, maleimides which forms a covalent bond with thiols (R-SH) are used to specifically label cysteine residues. The fluorophores with amino groups (-NH_2) and carboxyl groups (-COOH) are used for labeling using crosslinkers, used as a material for chemical synthesis.

SaraFluor™ B※ for super-resolution live-cell imaging

B: blinking

Developed exclusively for SMLM, SaraFluor B Series is a fluorescent probe that exhibits spontaneous blinking under physiological conditions. The lineup includes SaraFluor 650B (SF650B, HMSiR) which emits deep red light with red laser excitation, and SaraFluor 488B (SF488B, HEtetTFER) which emits green light with blue laser excitation. Target molecules can be labeled by HaloTag, NHS or maleimide.

Feature 1 Available for super-resolution imaging under the physiological condition

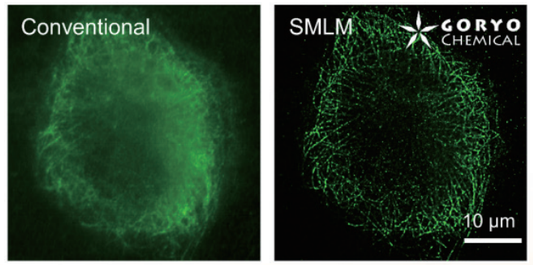
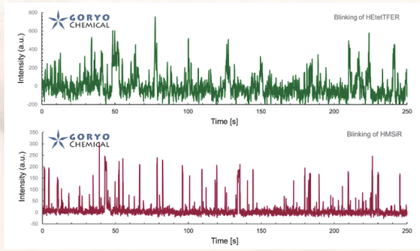


Fig.1 Super-resolution imaging of A549 cell
Conventional fluorescence and SMLM images of fixed A549 cell stained with anti-α-tubulin antibodies (DM1A 1/4000 dilution) and SaraFluor 488B labeled secondary antibody. The total internal reflection fluorescence microscopy images were taken using NIKON Ti, NIKON Apo TIRF100x (NA 1.49) and ImagEM (Hamamatsu Photonics) with 488 nm laser excitation. The SMLM image was processed using ImageJ and ThunderSTORM.

Feature 2 Blinking without high-power laser irradiation

Fig.2 Spontaneous blinking of SaraFluor B in PBS (pH 7.4)
Measured intensity change in a region corresponding to one molecule from a fluorescence image obtained by total internal reflection fluorescence microscopy with 647 nm laser excitation (SaraFluor 650B, HEtetTFER).
It is impossible to compare two vertical axes because different optical measurement systems were used.

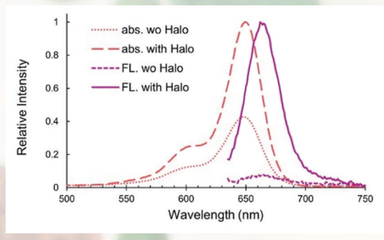


SaraFluor™ T※ with HaloTag® technology

T: turn-on

SaraFluor 650T (SF650) is a fluorophore based on a silicone rhodamine. It is conjugated with HaloTag ligand which immediately forms a covalent bond with HaloTag when mixed. Under physiologic conditions, this fluorophore alone shows weak fluorescence. It strongly fluoresces upon binding with HaloTag proteins. This feature enables high-contrast imaging without washing out the unbound fluorophore. It is suitable for fluorescence live cell imaging, single molecule imaging, and super-resolution imaging.

Feature Turn-on probe enables imaging with high contrast



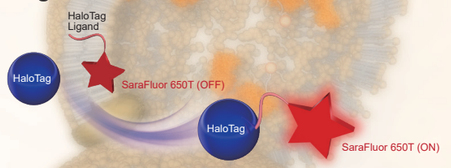


Fig.1 Spectra of HaloTag® SaraFluor 650T Ligand upon combined and not combined with HaloTag protein
Absorbance and fluorescence spectra were measured in the presence(with) and absence(w/o) of HaloTag protein, respectively. The addition of HaloTag protein increased absorbance and fluorescence intensity(Turn-on probe).

Imaging application

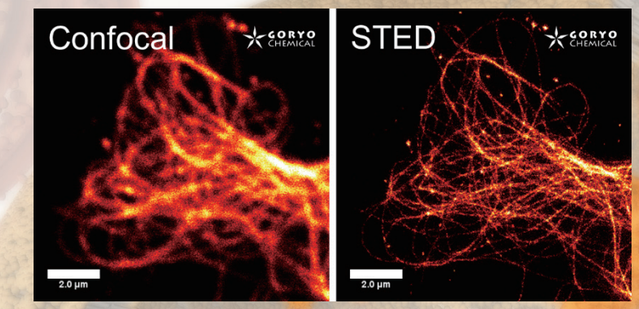


Fig.2 Intracellular microtubule network visualized with HaloTag® SaraFluor 650T Ligand
Microtubules imaged using HaloTag® SaraFluor 650T Ligand. Left, confocal microscopy image. Right, STED microscopy image. Data was kindly provided by Prof. Dr. Yasushi Okada (RIKEN QBiC; Grad. School of Sci, Univ. Tokyo)