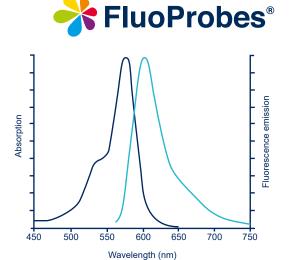


FT-47253A

ROX labeling agents

- RhodamineX (ROX) generally refers to the rhodamine dyes that are derived from julolidines. ROX dye has longer excitation and emission wavelengths ($\lambda_{exc}/\lambda_{em}$: ca 566/600nm) than other "conventional" rhodamines such as TAMRA, CR6G, CR110. EC: 80 000Mol⁻¹cm⁻¹.
- They are available as different derivatives for conjugation by conventional biochemistry methods.
- SE, for Amine-reactivity
- MTS and Maleimide, for thiol reactivity
- carboxylic acid salts, for organic chemistry



Product name	cat.number	MW (g·mol ⁻¹)	$\lambda_{\text{exc}}/\lambda_{\text{em}}$ max. (nm)	Solubility	Storage
ROX, SE	FP-96292A , 5mg	$C_{37}H_{33}N_3O_7$	568/595nm	DMS0 or DMF	(M)
Carboxy-X-rhodamine, succinimidyl ester		MW: 631.7	(MetOH)		
5-ROX, SE	FP-68336A , 5mg				
5-Carboxy-X-rhodamine	e, succinimidyl ester (single isomer)			
6-ROX, SE	FP-47253A , 5mg ^(a)	CAS: [216699-36-4]			
6-Carboxy-X-rhodamine	e, succinimidyl ester (single isomer)			
5-ROX, azide	FP-1B2391 , 5mg	C ₃₆ H ₃₆ N ₆ O ₄	570/591m	DMSO, DMF, MeOH	(M)
		MW: 616.71	82 000M ⁻¹ cm ⁻¹		
ROX-C5-Maleimide	FP-AK306A , 5mg	C ₄₂ H ₄₂ N ₄ O ₆	568/595nm	DMS0 or DMF	(M)
5(6)-Carboxy-X-rhodamine-C5-maleimide Thiol-reactive		MW: 698.83			
ROX, MTS	FP-58296A , 5mg	C ₃₆ H ₃₇ N ₃ O ₆ S _S	568/595nm	DMS0 or DMF	(M)
MethaneThioSulfonate-5(6)carboxy-X-rhodamine		MW: 671.84			
ROX, NH3 salt	FP-AM395A , 25mg	C ₃₉ H ₄₅ N ₃ O ₅	568/593nm (MetOH)	DMSO, DMF, MeOH,	(R)
Carboxy-X-Rhodamine	triethylammonium	MW: 635.81	113 000M ⁻¹ cm ⁻¹ (MeOH)	or H ₂ O (pH>6)	
5-ROX, NH3 salt	FP-M1307A , 10mg				(R)
5-Carboxy-X-Rhodamin	e triethylammonium)				
6-ROX, NH3 salt	FP-AM396A , 10mg				(R)
6-Carboxy-X-Rhodamin	e triethylammonium)				
6-ROX, free acid	FP-M1319A , 10mg	C ₃₃ H ₃₀ N ₂ O ₅	568/595 nm	DMSO, DMF, MeOH,	(M)
		MW: 534.6			

* λ exc/ λ em. and EC after coupling 1 (a) also available as item # FP-BZ6521, 100 μ l in dry DMSO at 83mg/ml (0.13M) (M): Store at -20°C and protect from light (M) 1 (R): Room temperature and protect from light (R)

Applications:

ROX is widely used in DNA sequencing and DNA probes based on FRET technique.

The single 5-isomer of ROX useful for specific applications notably FRET analysis [6], chromatography and CE analysis [5]. The single isomer (6), useful for specific applications: Real-Time PCR standard (free acid form), DNA sequencing [7], chromatography and CE analysis [8,9].

Reactive groups:

- The chemical group **Succinimidyl Ester (SE**, N-hydroxysuccinimydyl (NHS)) reacts in aqueous phase on primary (-NH₂) and secondary amines (=NH) (in fact on its deprotonated form), optimally at neutral pH or higher: amines present in proteins (Lys aminoacid) and in a lower proportion on NH₂ located in terminal peptidic chains. The reaction competes with hydrolysis, that increases with pH, and with the high dilutions of the molecule that should be derivatized.
- A stock solution of the SE activated dye can be made in anhydrous DMF or DMSO. The coupling reaction is usually carried out in a pH 8.5 buffer, i.e. 0.1-0.2M sodium bicarbonate,. The coupling reaction can alternatively be performed in an organic solvent for amino compounds that are insoluble in aguous solution.

- Maleimide reacts quickly and specifically with thiols in mild conditions. In most proteins, the reaction site is on cystein residues that are either intrinsically present or result from cysteines reduction, or introduced chemically or by genetic engineering. Unlike iodoacetamides maleimides do not react with histidines and methionines under physiological conditions.
 - $des, R-N \longrightarrow R-N \longrightarrow R-N \longrightarrow R-N$
- The **MethaneThioSulfonate (MTS)** group reacts with thiols to form a disulfide bond. It is more selective than malemide or pyridylthiol group.

Ask for more information about conjugation strategies and protocols.

References:

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