

## AF 488 hydrazide

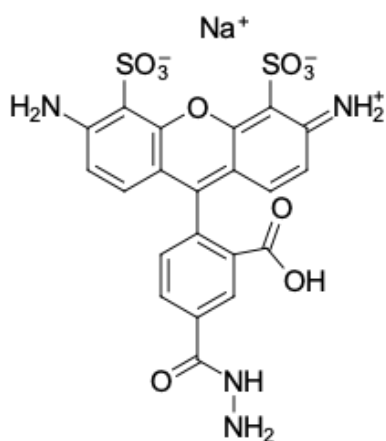
<http://www.lumiprobe.com/p/af-488-hydrazide-5>

This product is a hydrazide derivative of AF 488 dye. Hydrazides efficiently react with aldehydes and ketones, resulting in hydrazones, so that this compound can be used for conjugation with carbonyl derivatives of biomolecules.

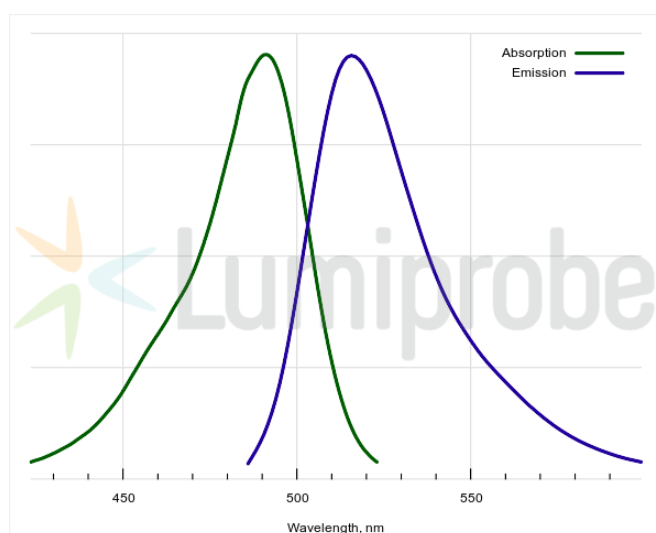
The reaction runs in aqueous conditions, which is important when working with antibodies and proteins. Cys-diol groups in sugars in glycosylated proteins and antibodies can be oxidized into dialdehydes, and cysteine in proteins can be converted with enzymes to formyl glycerol (i. e. reactive groups for conjugation with hydrazides). Carboxyl groups of aspartic and glutamic acids in proteins and peptides can also be conjugated with hydrazides in the presence of activating agents: carbodiimide (EDAC) or methyl morpholine (DMTMM) derivatives.

AF 488 is a bright and photostable dye. Due to its high hydrophilicity, this is a dye of choice for the labeling of sensitive proteins and antibodies. The dye is useful for many demanding applications, including microscopy.

AF 488 is a sulfonated rhodamine dye Rhodamine 110 (R110). Like other rhodamines, it is available as 5- and 6-isomers, which have almost identical photophysical properties. The isomers need to be separated, otherwise, the use of mixed isomer dye can lead to doubled peaks during HPLC or electrophoresis separations of the labeled products. This product is an isomerically pure 5-AF 488.



**Structure of AF 488 hydrazide**



**Absorption and emission spectra of AF 488**

### General properties

Appearance:	red-orange solid
Molecular weight:	570.49
CAS number:	2500973-94-2 (protonated)
Molecular formula:	$C_{21}H_{15}N_4NaO_{10}S_2$
Solubility:	good in DMF, DMSO, water
Quality control:	NMR $^1H$ and HPLC-MS (95+%)
Storage conditions:	24 months after receipt at $-20^\circ C$ in the dark. Transportation: at room temperature for up to 3 weeks. Desiccate. Avoid prolonged exposure to light.
Legal statement:	Product is offered and sold for research purposes only. Product is not tested for safety and efficacy in food, drug, medical device, cosmetic, no express or implied authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, for humans or animals or for commercial purposes.

### Spectral properties

Excitation/absorption maximum, nm: 495

$\epsilon$ , L·mol <sup>-1</sup> ·cm <sup>-1</sup> :	71800
Emission maximum, nm:	519
Fluorescence quantum yield:	0.91
CF <sub>260</sub> :	0.16
CF <sub>280</sub> :	0.10