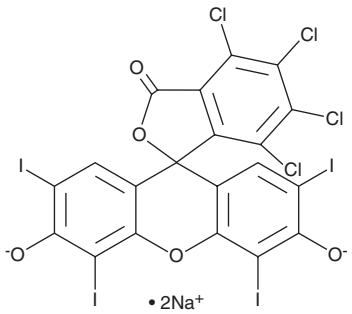
PRODUCT INFORMATION

Rose Bengal (sodium salt)

Item No. 28829

CAS Registry No.:	632-69-9
Formal Name:	4,5,6,7-tetrachloro-3′,6′-dihydroxy-2′,4′,5′,7′-tetraiodo-spiro[isobenzofuran-1(3H),9′-[9H]xanthen]-3-one, disodium salt
Synonyms:	Acid Red 94, Japan Red 105-1, Red No. 105-1
MF:	$C_{20}H_2Cl_4I_4O_5$ • 2Na
FW:	1,017.6
Abs./Em. Max:	548/567 nm
UV/Vis.:	λ_{max}: 219, 558 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Rose bengal (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the rose bengal (sodium salt) in the solvent of choice, which should be purged with an inert gas. Rose bengal (sodium salt) is soluble in the organic solvent DMSO at a concentration of approximately 10 mg/ml. Rose bengal (sodium salt) is slightly soluble in ethanol and dimethyl formamide.

Rose bengal (sodium salt) is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Rose bengal is a xanthene dye, fluorescein derivative, and photosensitizer.[1,2] It exhibits absorption/emission maxima of 548/567 nm, respectively.[3] Rose bengal binds to *S. aureus* cells and decreases survival of photoirradiated *S. aureus* to 0.012% when used at a concentration of 1 µM.[1] It generates singlet oxygen when exposed to photoirradiation in cell-free assays and induces potassium ion leakage from *S. aureus* and bovine erythrocytes in the presence of photoirradiation. Rose bengal inhibits the cytochrome P450 (CYP) isoform CYP3A4/5 and the UDP-glucuronosyltransferase (UGT) isoform UGT1A6 in human liver microsomes in a light-dependent manner, with IC_{50} values of 0.072 and 0.035 µM, respectively, in yellow light, 3.1 and 4.2 µM, respectively, in ambient light, and 3 and 4.2 µM, respectively, in the dark.[4] It has been used for staining of live cells, but exhibits both intrinsic and phototoxicity.[2]

References

1. Kato, H., Komagoe, K., Nakanishi, Y., *et al.* Xanthene dyes induce membrane permeabilization of bacteria and erythrocytes by photoinactivation. *Photochem. Photobiol.* **88(2)**, 423-431 (2012).
2. Feenstra, R.P.G. and Tseng, S.C.G. Comparison of fluorescein and rose bengal staining. *Ophthalmology* **99(4)**, 605-617 (1992).
3. Sabnis, R. W. *Handbook of biological dyes and stains: Synthesis and industrial applications*. *John Wiley & Sons, Inc.*, Madison, NJ, USA (2010).
4. Kazmi, F., Haupt, L.J., Horkman, J.R., *et al. In vitro* inhibition of human liver cytochrome P450 (CYP) and

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