SAIVI™ Alexa Fluor® 680 and Alexa Fluor® 750 Injectable Contrast Agents *human serum transferrin*

Table 1. Contents and storage information.

Material	Amount	Concentration	Storage	Stability
Human serum transferrin conjugates	1 mL, 12.5 nmol per vial	1.25 nmol transferrin/100 µL (recommended volume per injected dose) in azide-free phosphate buffered saline (PBS), pH 7.2; passed through a 0.2 µm sterile filter	• 2–6°C • Do not freeze • Protect from light	When stored as directed, product is stable for at least 3 months.
Approximate Fluorescence Excitation and Emission, in nm : 679/702, for SAIVI™ Alexa Fluor® 680 agent; 749/775, for SAIVI™ Alexa Fluor® 750 agent.				

Introduction

Transferrin is a monomeric serum glycoprotein (~80,000 daltons) that binds to receptors that are overexpressed in many types of rapidly proliferating tumor cells.[1] Transferrin can accumulate intracellularly in tumors through receptor-mediated endocytosis, and may also accumulate in tumor tissue via the enhanced permeability and retention (EPR) effect attributed to pathological alterations of tumor vasculature. The high blood vessel density, increased permeability, and ineffective lymphatic drainage common to some tumors can contribute to this effect;[1,2] similar accumulation may occur in association with vascular irregularities found in inflammatory processes such as rheumatoid arthritis.[3]

Molecular Probes provides researchers with human serum transferrin conjugated to near-infrared–fluorescent Alexa Fluor® 680 and Alexa Fluor® 750 dyes (Figure 1) for use as injectable contrast agents in small animal *in vivo* imaging. SAIVI™ injectable contrast agents have been optimized for emission intensity and tested by *in vivo* imaging after injection in disease models established in mice.

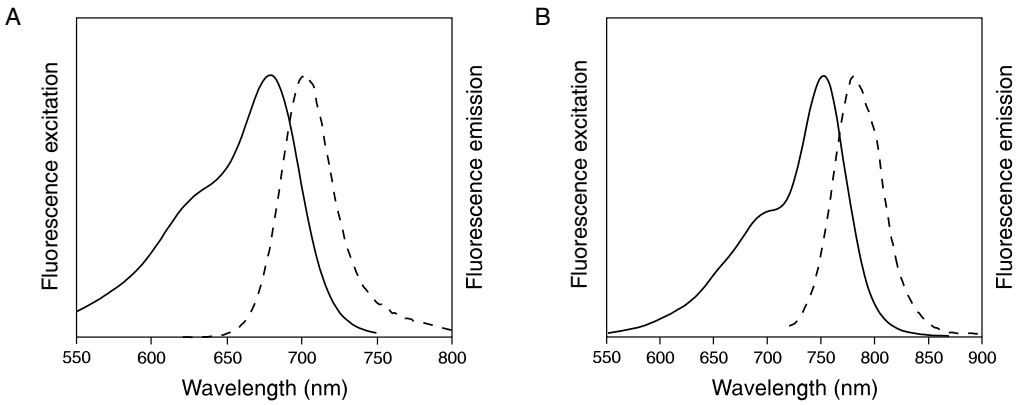

Figure 1. Fluorescence excitation and emission spectra of Alexa Fluor® 680 dye (A) and Alexa Fluor® 750 dye (B).

Guidelines for Use

Using Imaging Agents

Allow the injectable contrast agent to equilibrate to room temperature before use.

The recommended procedure for *in vivo* imaging with SAIVI™ Alexa Fluor® 680 and Alexa Fluor® 750 imaging agents is administration via tail-vein injection and imaging 10 min–24 hr after injection, depending upon the experiment. In our experience, substantial clearance of circulating agent (mainly through the kidneys) will occur over ~24 hr; maximal signal may occur within the first few hours of injection. We recommend imaging frequently in initial experiments to determine the appropriate time course for each type of experiment.

These imaging agents have been used to visualize xenograft subcutaneous tumors and to characterize vascular changes in rodent models of inflammatory disease, using appropriate near-infrared imaging equipment. We have observed evolution of signal to background in xenografted solid tumors over time periods ranging from 1 to 48 hr.

Properties

The human holotransferrin (transferrin saturated with iron) used to prepare these transferrin conjugates is determined to be >98% pure by SDS-polyacrylamide gel electrophoresis.

Warning

These transferrin conjugates contain human transferrin. The venous blood from which the human transferrin is isolated has been tested for the presence of Hepatitis B Surface Antigen (HBsAg) and for HIV (HTLV III) antibody and was found to be negative for both. However, in accordance with good laboratory procedure, these products must be handled as if they are capable of transmitting hepatitis or other infectious agents.

References

1. Cancer Res 46, 6387 (1986); **2.** Photochem Photobiol 72, 234 (2000); **3.** Arthritis Rheum 50, 961 (2004).

Product List **Current prices may be obtained from our website or from our Customer Service Department.**

Cat #	Product Name	Unit Size
S34790	SAIVI™ Alexa Fluor® 680 injectable contrast agent *human serum transferrin*	1 mL
S34791	SAIVI™ Alexa Fluor® 750 injectable contrast agent *human serum transferrin*	1 mL

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