

Fluorescent Imaging Agent

Caution: For Laboratory Use. A product for research purposes only.

Cat B 750 FAST™

Product Number: NEV11098

DESCRIPTION: *Cat B 750 FAST™* is a member of a family of activatable fluorescent imaging agents comprising a novel architecture, termed F.A.S.T. (Fluorescent Activatable Sensor Technology) that confers an improved pharmacokinetic profile with a broader range of early imaging time points. This architecture also offers higher target specific signal with reduced background.

Cat B 750 FAST is a Cathepsin B activatable agent that is optically silent upon injection and produces fluorescent signal after cleavage by Cathepsin B produced by inflammatory cells and tumor cells. *Cat B 750 FAST* may be used to monitor inflammation, tumor activity, progression of disease and the efficacy of therapeutic treatment in applications such as oncology, inflammation, cardiovascular disease and some neurological diseases.

MATERIAL (Needs to be reconstituted)

CONTENTS: Each vial contains 48 nmol of *Cat B 750 FAST* in dry solid form. *Cat B 750 FAST* has been filtered through a 0.2 µm filter prior to drying. Reconstitute *Cat B 750 FAST* with 1.2 mL of 1 x PBS before injecting into animals. The packaged material provides sufficient reagent for imaging approximately 10 mice (weighing ~25 grams each) when using the recommended dose of 4 nmols (100 µL) of *Cat B 750 FAST* per mouse. Some applications like Atherosclerosis imaging require a higher dose. (see note below)

PROPERTIES: The physical characteristics of *Cat B 750 FAST* can be found in **Table 1 and Figure 1.**

STORAGE & HANDLING:

- Upon receipt, *Cat B 750 FAST* should be **STORED AT -20 °C AND PROTECTED FROM LIGHT.**
- When stored and handled properly, *Cat B 750 FAST* is stable for up to 12 months in dry solid form.
- Before opening the vial check to ensure that all of the solid material is at the bottom of the vial.
- After reconstituting with PBS, gently swirl the solution to ensure that the solid is fully in solution.

Table 1. *Cat B 750 FAST* Characteristics

Property	Specification
MW	23,000 g mol ⁻¹
Fluorescence ¹	
• Excitation	750 nm
• Emission	770 nm
Absorbance	750 nm (activated)
Purity ²	>95 %
Appearance	Blue Solid

1. Absorbance and fluorescence maxima of activated *Cat B 750 FAST* in 1x PBS.
2. As determined by RP-HPLC and measuring absorbance at 750 nm.

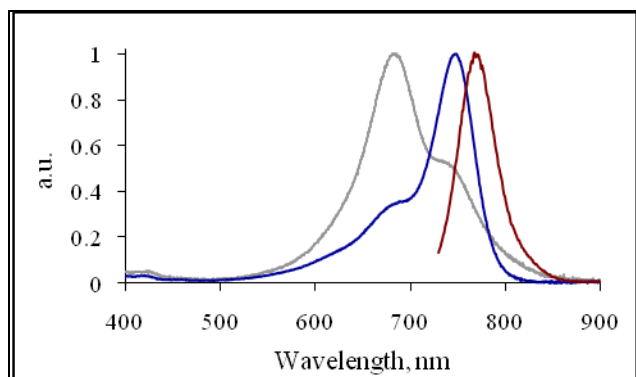


Figure 1. Normalized absorbance (grey), excitation (blue) and fluorescence emission (red) spectra of *Cat B 750 FAST* in 1x PBS.

- Once reconstituted with 1 x PBS, the solution is stable up to 10 days when stored at 2-8 °C and protected from light.

IN VIVO IMAGING AND APPLICATIONS:

- Cathepsin B is a cysteine protease involved in the degradation of the extracellular matrix and may be one of the key factors in cancer progression. Cathepsin B correlates with invasiveness and metastatic capabilities in many tumors. In breast cancer specifically, high expression levels of cathepsin B have been linked to highly aggressive tumors and poor clinical outcome. Cathepsin B is also upregulated in a variety of inflammatory cells (including eosinophils, neutrophils, and macrophages), and may provide an inflammation readout that indicates the potential vulnerability of Atherosclerotic plaques in Cardiovascular disease.
- The generally recommended procedure for *in vivo* imaging with *Cat B 750 FAST* is administration via intravenous injection and imaging **6 hours post injection**. Earlier and later time points may be appropriate for some disease models, and the optimal imaging time point for any application should be determined empirically. **Some applications like imaging of atherosclerotic plaques require an 8 nmol dose and may benefit from a later imaging time point.**
- *Cat B 750 FAST* enables imaging of Cathepsin B activity in applications including:
 - Cardiovascular disease,
 - Oncology
 - Inflammation
 - Certain neurological diseases

NOTES:

- *PerkinElmer's Cat B 750 FAST* is intended for research purposes only and is not for human use. It must be used by or directly under the supervision of a technically qualified individual experienced in handling potentially hazardous materials. Please read the Material Safety Data Sheet (MSDS) provided for this product.
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