

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

Cat B 680 FAST™ FLUORESCENT IMAGING AGENT

Product Number: NEV11112

DESCRIPTION: *Cat B 680 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 680 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 680 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 24 nmol of *Cat B 680 FAST* in dry solid form. *Cat B 680 FAST* has been filtered through a 0.2 µm filter prior to drying. Reconstitute *Cat B 680 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 2 nmols (100 µL) of *Cat B 680 FAST* per mouse. Some applications like Atherosclerosis imaging require a higher dose. (see note below)

PROPERTIES: The physical characteristics of *Cat B 680 FAST* can be found in **Table 1** and **Figure 1**.

STORAGE & HANDLING:

- Upon receipt, *Cat B 680 FAST* should be **STORED AT 2-8 °C AND PROTECTED FROM LIGHT**.
- When stored and handled properly, *Cat B 680 FAST* is stable for up to 3 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.
- **Once reconstituted with 1 x PBS, the solution is stable up to 10 days when stored at 2-8 °C and protected from light.**

Table 1. Cat B 680 Characteristics

| Property | Specification |
|---------------------------|--|
| MW | 33,000 g mol ⁻¹ |
| Fluorescence ¹ | <ul style="list-style-type: none"> • Excitation 675 nm • Emission 693 nm |
| Absorbance | 675 nm (activated) |
| Purity ² | >95 % |
| Appearance | Blue Solid |

1. Absorbance and fluorescence maxima of activated *Cat B 680 FAST* in 1x PBS.
2. As determined by RP-HPLC and measuring absorbance at 675 nm.

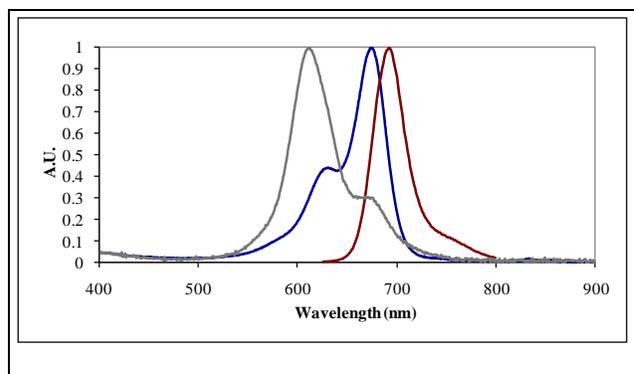


Figure 1. Normalized absorbance (grey), excitation (blue) and fluorescence emission (red) spectra of *Cat B 680 FAST* in 1x PBS.

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 680 FAST* is administration via intravenous injection and imaging **6-24 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 may require a 4 nmol dose and may benefit from a later imaging time point.**
- *Cat B 680 FAST* enables imaging of Cathepsin B activity in applications including:
 - Cardiovascular disease,
 - Oncology
 - Inflammation
 - Certain neurological diseases

NOTES:

- *PerkinElmer's Cat B680 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.
- Several of *PerkinElmer's* products and product applications are covered by U.S and foreign patents and patents pending. Our products are not available for resale or other commercial uses without a specific agreement from *PerkinElmer*.

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