Data Sheet

Tracer-653: a fluorescent blood pool imaging agent

Cat # TR-1001

Product Description: Tracer-653 is a deep-red fluorescent water soluble non-targeted vascular imaging agent [1] which is distributed passively through the blood vessels and enables imaging of vascularity and vascular leakage. It has been validated as an in vivo tracer dye for monitoring blood-brain-barrier disruption [2].

Properties of Tracer-653: The structure and physical properties of Tracer-653 are shown in Figs 1 &2 and Table 1.

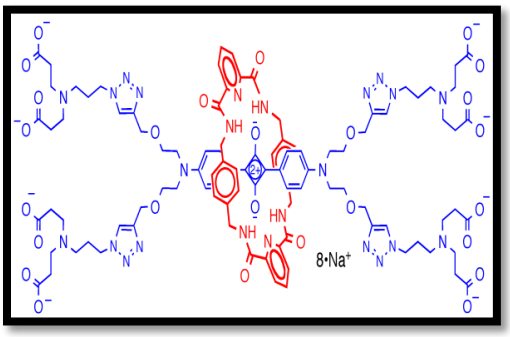

Fig 1: Chemical structure of Tracer 653

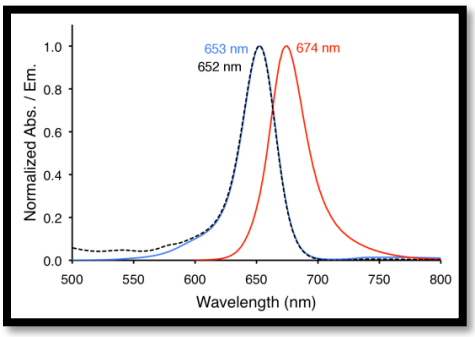

Fig 2: Absorbance (blue) and emission spectra (red) of Tracer-653 in water (dotted line in 10% FBS).

Property	Specification
MW	2,279
FL: Ex max, Em max	653nm; 674nm
Absorbance	653nm
Log ε	5.2
Φ_f	0.23
Appearance	Blue solid

Table 1: Properties

Tracer-653 Versus Evans Blue Stain for Imaging BBB integrity: Figure 3 shows the comparison between Evans Blue which is routinely used to monitor BBB disruption in animal models, and Tracer-653 accumulation into cryoinjured mouse brains. Ex vivo fluorescence images of Evans Blue and Tracer-653 in brains excised from mice that were dosed with probe either 6 h (Day 0) or 3 days (Day 3) after cryoinjury. *The smaller effective size of Tracer-653 likely allows it to permeate into areas that are not accessible by the Evans-Blue-albumin complex, thus increasing the area of tissue that is stained by Tracer-653*

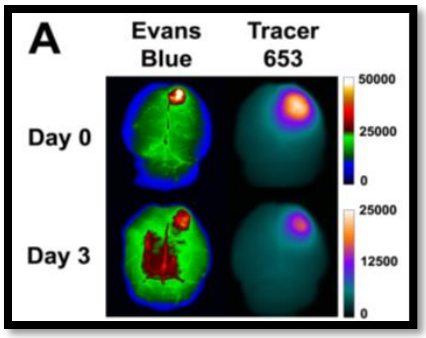

Fig 3: BBB Integrity image.

Significant Features of Tracer-653:

- High chemical and photochemical stability
- Very low tissue uptake in living mice
- Deep red emission
- Rapid renal clearance and low phototoxicity
- Resistance to self-quenching
- Low affinity for albumin
- Strong pH-independent brightness over the pH range 6-10
- Compatible with longer λ probes for simultaneous 2-color in vivo imaging

Formulation Procedure: Add 1mL of PBS to dissolve the blue solid in vial and Inject 100uL per 25g mouse.

Catalog #	Product Name	Size/Dose
TR-1001	Tracer-653	250 nM/10 doses based upon a 25g mouse

References:

1. Cole E et. al. Water-soluble, deep-red fluorescent squarainerotaxanes. Organic &Biomolecular Chemistry 2012, 10:5769-5773.
2. Smith BA et.al. Multicolor fluorescence imaging of traumatic brain injury in a cryolesion mouse model. ACS Chemical Neuroscience 2012, 3:530-537.

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