

## Product Information

### Serotonin 5HT<sub>3</sub> Receptor, human membrane suspension

Catalog Number **S4951**  
Storage Temperature  $-70\text{ }^{\circ}\text{C}$

Synonyms: 5-HT<sub>3</sub>R, HTR3

#### Product Description

Serotonin (5-hydroxytryptamine, 5-HT) is a widely distributed neurotransmitter and hormone in the mammalian central nervous system (CNS) and periphery.<sup>1,2</sup> In the CNS, 5-HT is considered an inhibitory neurotransmitter regulating a wide range of sensory, motor, and cortical functions. The multiple physiological effects of 5-HT in the CNS and periphery are mediated by at least four receptor classes, 5-HT<sub>1</sub>, 5-HT<sub>2</sub>, 5-HT<sub>3</sub>, and 5-HT<sub>4</sub>, based on their molecular masses, ligand binding properties, and coupling to different signal transduction systems.<sup>3</sup> The 5-HT<sub>3</sub> receptor is a ligand-gated ion channel that causes fast, depolarizing responses in neurons after activation. It appears the heteromeric combination of A and B subunits is necessary to provide the full functional features of this receptor, since either subunit alone results in receptors with very low conductance and response amplitude.

The Serotonin 5HT<sub>3</sub> Receptor, human is a frozen aliquot of membranes from human platelet cells. Each vial contains 100 units of receptor membrane suspension, at a receptor density of  $\sim 8$  fmoles/mg protein. The membrane suspensions are supplied at  $\sim 10$  mg/mL in 20 mM HEPES containing 150 mM NaCl and 10% sucrose, pH 7.4.

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

Store the product tightly sealed at  $-70\text{ }^{\circ}\text{C}$ . The receptor remains active for several months when stored at  $-70\text{ }^{\circ}\text{C}$ .

Repeated freeze-thaw of this product is not recommended.

#### Procedure

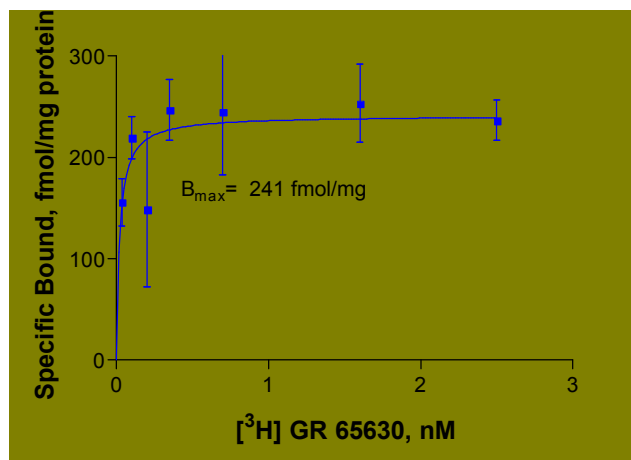
##### Standard Receptor Binding Assay

1. Prepare Assay Buffer – 20 mM HEPES containing 150 mM NaCl, pH 7.4.
2. Thaw product vial quickly and mix with Assay Buffer. Resuspend 100 units of receptor in 20 mL of Assay Buffer. Homogenize and store on ice until addition to assay tubes.
3. Prepare Radioligand Solution – 3.5 nM [<sup>3</sup>H] GR 65630
4. Prepare Unlabeled Ligand Solution – 10  $\mu\text{M}$  GR 65630.
5. Prepare the assay volume by combining 400  $\mu\text{L}$  of receptor suspension, 50  $\mu\text{L}$  of Radioligand Solution (0.35 nM final), and 50  $\mu\text{L}$  of Unlabeled Ligand Solution (1.0  $\mu\text{M}$  final).
6. Incubation for 60 minutes at 25  $^{\circ}\text{C}$ .
7. Use a GF/B grade glass microfiber filter.
8. Wash the sample 5 times with 50 mM HEPES containing 150 mM NaCl, 1 mL per tube.
9. Add the assay volume to a 96 well plate. Up to 100 assays may be performed with the solutions prepared.

#### Results

Typical results of Standard Receptor Binding Assay. Results may vary from lot to lot.

##### 5HT<sub>3</sub>-H Saturation Isotherm



## References

1. Azmitia, E., et al., In: Psychopharmacology: The Third Generation of Progress. Meltzer, H.Y. (ed.), Raven Press, (New York, NY: 1987).
2. Peroutka, S.J., Annu. Rev. Neurosci., **11**, 45 (1988).
3. Julius, D., Ann. Rev. Neurosci., **14**, 335 (1991).

BKR,MAM 05/10-1

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