



## Product Information

### ANTI-SEROTONIN 5-HT<sub>7</sub> RECEPTOR

Developed in Rabbit, Affinity Isolated Antibody

Product Number **S 5062**

#### Product Description

Anti-Serotonin 5-HT<sub>7</sub> Receptor is developed in rabbit using a highly purified peptide corresponding to amino acid residues 8-23 of the rat 5-HT<sub>7</sub> receptor. The antibody was affinity isolated on immobilized immunogen.

Anti-Serotonin 5-HT<sub>7</sub> Receptor recognizes the 5-HT<sub>7</sub> Receptor protein (41 kDa) from rat cortex and hippocampus by immunohistochemistry. Database sequence homology searches indicate that the peptide sequence is unique to rat 5-HT<sub>7A</sub>, 5-HT<sub>7B</sub> and 5-HT<sub>7C</sub>. There is also significant sequence overlap with the corresponding mouse and human protein sequences.

The monoamine serotonin (5-hydroxytryptamine [5-HT]) mediates its effects in a number of physiological processes including anxiety, depression, sexual activity and sleep through interactions with different receptor subtypes.<sup>1</sup> At least 14 mammalian serotonin receptor subtypes have been identified and classified into several families on the basis of common structural, pharmacological and functional criteria.<sup>2</sup> These receptors differ in their tissue and cellular localization, affinity for serotonin and second messenger pathways. The majority of these receptors stimulate a GTP-binding protein upon agonist stimulation and couple to adenylate cyclase or phospholipase C. In contrast, the 5-HT<sub>3</sub> receptor acts as a cation-selective channel. The serotonin receptors have generated considerable pharmacological interest as targets for the identification of selective drugs that interact with a specific receptor subtype.

The 5-HT<sub>7</sub> receptor is widely expressed in the brain. Receptor autoradiographic studies and *in situ* hybridization on rat brain have localized the 5-HT<sub>7</sub> receptor to the cortex, thalamus, hypothalamus and hippocampus among others.<sup>3</sup> The limbic system is particularly well represented. Functional studies in rat astrocytes from several brain regions have shown that the 5-HT<sub>7</sub> receptor is positively coupled to adenylyl cyclase.<sup>4</sup> Alternatively spliced isoforms have been identified in human brain.<sup>5</sup>

The 5-HT<sub>7</sub> receptor is also expressed outside of the central nervous system (CNS) where it has been localized to vascular smooth muscle,<sup>6</sup> the ileum<sup>7</sup> and immune cells of the spleen, thymus and peripheral blood lymphocytes.<sup>8</sup> In the vascular smooth muscle, the 5-HT<sub>7</sub> receptor has been functionally linked to cAMP production.<sup>9</sup>

#### Reagents

Anti-Serotonin 5-HT<sub>7</sub> Receptor is supplied as lyophilized affinity isolated antibody (100 µl) containing 1% bovine serum albumin and 0.02% sodium azide.

#### Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

#### Preparation Instructions

Reconstitute the lyophilized vial with 100 µl deionized water. Antibody dilutions should be made in buffer containing 1-3% bovine serum albumin.

#### Storage/Stability

Prior to reconstitution, store at -20°C. After reconstitution, the stock antibody solution may be stored at -20°C for up to 6 months. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

#### Product Profile

Suggested working dilution for immunohistochemistry on frozen sections is 1:100-1:300 using the biotin-streptavidin/ horseradish peroxidase. Immunohistochemical staining of rat brain correlates well with Northern blot analysis and *in situ* hybridization studies.

Note: In order to obtain best results and assay sensitivities of different techniques and preparations, we recommend determining optimal working dilutions by titration test.

#### References

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6. Terron, J.A., Br. J. Pharmacol., **121**, 563 (1997).
7. Hemedah, M. et al., Eur. J. Pharmacol., **387**, 265 (2000).
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