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## Area of Expertise

My current scholarly interests include educational psychology and innovative learning strategies for professional students. I am particularly interested in pre- and post-matriculation non-cognitive attributes that influence academic success. During my career in biomedical research, I studied the structure and function of ligand-gated ion channels, with an emphasis on 5-Hydroxytryptamine<sub>3</sub> (5-HT<sub>3</sub>) receptors. I investigated a putative alcohol-binding domain of the 5-HT<sub>3</sub> receptor. Another project focused on the 5-HT ligand (5-HT) binding domain of the receptor, with an emphasis on amino residues that couple agonist binding to conformational changes in the N-termini that initiate channel opening. The NIH, American Heart Association, and Alcoholic Beverage Medical Research Foundation have funded my research in this area.

## Qualifications

BS in Pharmacy, University of Texas at Austin  
PhD in Pharmacy, University of Texas at Austin

## Recent Publications

### Therapeutics of 5-HT<sub>3</sub> receptor antagonists: Current uses and future directions

MacHu, T. K., Jun 2011, In: *Pharmacology and Therapeutics*. 130, 3, p. 338-347 10 p.

### Hydrophobic photolabeling studies identify the lipid-protein interface of the 5-HT<sub>3A</sub> receptor

Sanghvi, M., Hamouda, A. K., Davis, M. I., Morton, R. A., Srivastava, S., Pandhare, A., Duddempudi, P. K., Machu, T. K., Lovinger, D. M., Cohen, J. B. & Blanton, M. P., 6 Oct 2009, In: *Biochemistry*. 48, 39, p. 9278-9286 9 p.

### Colchicine: A novel positive allosteric modulator of the human 5-Hydroxytryptamine<sub>3A</sub> receptor

De Oliveira-Pierce, A. N., Zhang, R. & Machu, T. K., May 2009, In: *Journal of Pharmacology and Experimental Therapeutics*. 329, 2, p. 838-847 10 p.

### The role of loop F residues in determining differential d-tubocurarine potencies in mouse and human 5-hydroxytryptamine<sub>3A</sub> receptors

Zhang, R., Wen, X., Militante, J., Hester, B., Rhubottom, H. E., Sun, H., Leidenheimer, N. J., Yan, D., White, M. M. & Machu, T. K., 6 Feb 2007, In: *Biochemistry*. 46, 5, p. 1194-1204 11 p.

### (3 chlorophenyl) biguanide

Machu, T., 2007, *xPharm: The Comprehensive Pharmacology Reference*. Elsevier Inc., p. 1-2 2 p.

### GR65630

Machu, T., 2007, *xPharm: The Comprehensive Pharmacology Reference*. Elsevier Inc., p. 1-2 2 p.

### LY278584

Machu, T., 2007, *xPharm: The Comprehensive Pharmacology Reference*. Elsevier Inc., p. 1-2 2 p.

### SR57227A

Machu, T., 2007, *xPharm: The Comprehensive Pharmacology Reference*. Elsevier Inc., p. 1-2 2 p.

### Zacopride

Machu, T., 2007, *xPharm: The Comprehensive Pharmacology Reference*. Elsevier Inc., p. 1-2 2 p.

**N-terminal domains in mouse and human 5-hydroxytryptamine<sub>3A</sub> receptors confer partial agonist and antagonist properties to benzylidene analogs of anabaseine**

Zhang, R., White, N. A., Soti, F. S., Kem, W. R. & Machu, T. K., Jun 2006, In: *Journal of Pharmacology and Experimental Therapeutics*. 317, 3, p. 1276-1284 9 p.