

### Chapters in Books:

Zimmerman, A.L. Cyclic nucleotide gated ion channels. **In:** Cell Physiology Source Book: A Molecular Approach (Essentials of Membrane Biophysics is the new subtitle for 4th edition, 2012). N. Sperelakis, editor. Academic Press (chapter 36 in 1st edition, 1995; chapter 46 in 2nd edition, 1998; chapter 47 in 3rd edition, 2001, Chapter 35 in 4th edition, 2012).

Zimmerman, A.L. Visual transduction. **In:** Cell Physiology Source Book: A Molecular Approach (Essentials of Membrane Biophysics is the new subtitle for 4th edition, 2012). N. Sperelakis, editor. Academic Press (chapter 37 in 1st edition, 1995; chapter 47 in 2nd edition, 1998; chapter 48 in 3rd edition, 2001; Chapter 38 in 4th edition, 2012).

### Refereed Journal Articles:

Zimmerman, A.L., King, E.B., Barrett, D.L. and Petrakis, N.L. The incidence and significance of intracytoplasmic calcifications in nipple aspirate specimens. *Acta Cytol.* **21:** 685-692 (1977).

Jensen, R.H., Bigbee, W.L., Zimmerman, A.L. and King, E.B. Plasminogen activator as a diagnostic marker for preneoplastic cells in human gynecologic specimens. *Acta Cytol.* **23:** 105 (1979).

Schwarzmann, G., Weigandt, H., Rose, B., Zimmerman, A.L., Ben-Haim, D. and Loewenstein, W.R. Diameter of the cell-to-cell junctional membrane channels as probed with neutral molecules. *Science* **213:** 551-553 (1981).

Tedeschi, B., Wilson, D.L., Zimmerman, A.L. and Perry, G.W. Are axonally transported proteins released from sciatic nerves? *Brain Research* **211:** 175-178 (1981).

Zimmerman, A.L. and Rose, B. Permeability properties of cell-to-cell channels: Kinetics of fluorescent tracer diffusion through a cell junction. *J. Membrane Biol.* **84:** 269-283 (1985).

Zimmerman, A.L., Yamanaka, G., Eckstein, F., Baylor, D.A. and Stryer, L. Interaction of hydrolysis-resistant analogs of cyclic GMP with the phosphodiesterase and light-sensitive channel of retinal rod outer segments. *Proc. Natl. Acad. Sci. USA* **82:** 8813-8817 (1985).

Zimmerman, A.L. and Baylor, D.A. The cyclic GMP-sensitive conductance of retinal rods consists of aqueous pores. *Nature* **321:** 70-72 (1986).

Karpen, J.W., Zimmerman, A.L., Stryer, L. and Baylor, D.A. Gating kinetics of the cyclic-GMP-activated channel of retinal rods: flash photolysis and voltage-jump studies. *Proc. Natl. Acad. Sci. USA.* **85:** 1287-1291 (1988).

Zimmerman, A.L., Karpen, J.W. and Baylor, D.A. Hindered diffusion in excised membrane patches from retinal rod outer segments. *Biophys. J.* **54:** 351-355 (1988).

Zimmerman, A.L., Karpen, J.W., Kantrowitz-Gordon, S., Tsai, C-S. S., Baylor, D.A. and Stryer, L. Workings of the cGMP-activated channels of retinal rods. *Neuroscience Research*, Suppl. 12, S165 - S174 (1990).

Zimmerman, A.L. and Baylor, D.A. Cation interactions within the cyclic GMP-activated channel of retinal rods from the tiger salamander. *J.Physiol.* **449**: 759-783 (1992).

Gordon, S.E., Brautigan, D.L. and Zimmerman, A.L. Protein phosphatases modulate the apparent agonist affinity of the light-regulated ion channel in retinal rods. *Neuron* **9**: 739-748 (1992).

Gordon, S.E., Downing-Park, J. and Zimmerman, A.L. Modulation of the cGMP-gated ion channel in frog rods by calmodulin and an endogenous inhibitory factor. *J. Physiol.* **486**: 533-546 (1995).

Gordon, S.E., Downing-Park, J., Tam, B. and Zimmerman, A.L. Diacylglycerol analogs inhibit the rod cGMP-gated channel by a phosphorylation-independent mechanism. *Biophys. J.* **69**: 409-417 (1995).

Zimmerman, A.L. Cyclic nucleotide-gated channels. *Current Opinion in Neurobiology* **5**: 296-303 (1995).

Crary, J.I., Gordon, S.E. and Zimmerman, A.L. Perfusion system components release agents that distort functional properties of rod cyclic nucleotide-gated ion channels. *Visual Neuroscience* **15**: 1189-1193 (1998).

Crary, J.I., Dean, D.M., Nguitragool, W., Kurshan, Peri T. and Zimmerman, A.L. Mechanism of Inhibition of Cyclic Nucleotide-Gated Ion Channels by Diacylglycerol. *J. Gen. Physiol.* **116**: 755-768 (2000).

Crary, J.I., Dean, D.M., Maroof, F. and Zimmerman, A.L. Mutation of a single residue in the S2-S3 loop of CNG channels alters the gating properties and sensitivity to inhibitors. *J. Gen. Physiol.* **116**: 769-779 (2000).

Dean, D.M., Nguitragool, W., Miri, A., McCabe, S.L. and Zimmerman, A.L. All-*trans*-retinal shuts down rod cyclic nucleotide-gated ion channels: a novel role for photoreceptor retinoids in the response to bright light? *Proc. Natl. Acad. Sci. USA* **99**: 8372-8377 (2002).

Zimmerman, A.L. Two B or not two B? Questioning the rotational symmetry of tetrameric ion channels. *Neuron* **36**: 997-999 (2002). This was an invited, but peer-reviewed, minireview.

McCabe, S.L., Pelosi, D.M., Tetreault, M., Miri, A., Nguitragool, W., Kovithvathanaphong, P., Mahajan, R. and Zimmerman, A.L. All-*trans*-retinal is a closed-state inhibitor of rod cyclic nucleotide-gated ion channels. *J. Gen. Physiol.* **123**: 521-531 (2004).

Zimmerman, A.L. Capturing ion channel gating: a little salt on the tail does the trick. *J. Gen. Physiol.* **124**: 627-629 (2004). Invited paper, but reviewed.

Yeh, J.I., Zimmt, M. B., and Zimmerman, A. L. Nanowiring of a Redox Enzyme by Metallized Peptides. Rapid communication, *Biosensors & Bioelectronics* **21**: 973-978 (2005).

Horrigan, D.M., Tetreault, M.L., Tsomaia, N., Vasileiou, C., Borhan, B., Mierke, D.F., Crouch, R.K. and Zimmerman, A.L. Defining the retinoid binding site in the rod cyclic nucleotide-gated channel. *J. Gen. Physiol.* **126**: 453-460 (2005).

Tetreault, M.L., Henry, D., Horrigan, D.M., Matthews, G. and Zimmerman, A.L. Characterization of a novel cyclic nucleotide-gated channel from zebrafish brain. *Biochem. Biophys. Res. Comm.* **348**: 441-449 (2006).

He, Q., Alexeev, D., Estevez, M.E., McCabe, S.L., Calvert, P.D., Ong, D.E., Cornwall, M.C., Zimmerman, A.L. and Makino, C.L. Cyclic nucleotide-gated ion channels in rod photoreceptors are protected from retinoid inhibition. *J. Gen. Physiol.* **128**: 473-485 (2006).

Tetreault, M.L., Horrigan, D.M., Kim, J.A. and Zimmerman, A.L. Retinoids restore normal cGMP sensitivity of mutant ion channels associated with cone dystrophy. *Molecular Vision* **12**: 1699-1705 (2006).

Zimmerman, A.L. The sweet smell of success: conclusive evidence that cyclic AMP hydrolysis does not trigger fast adaptation in olfactory receptor cells. *J. Gen. Physiol.* **128**: 149-151 (2006). Invited paper, but reviewed.

Isayama, T., McCabe England, S.L., Crouch, R.K., Zimmerman, A.L. and Makino, C.L. Beta-ionone activates and bleaches visual pigment in salamander photoreceptors. *Visual Neuroscience* **26**: 267-274 (2009).

Khan, S., Perry, C., Tetreault, M.L., Henry, D., Trimmer, J.S., Zimmerman, A.L. and Matthews, G. A novel cyclic nucleotide-gated ion channel enriched in synaptic terminals of isotocin neurons in zebrafish brain and pituitary. *Neuroscience* **165**: 79-89 (2010).

Bellono, N.W., Kammel, L.G., Zimmerman, A.L. and Oancea, E. Ultraviolet light phototransduction activates TRPA1 in human melanocytes. Under review (2012).

#### **Non-refereed Journal Articles:**

King, E.B., Zimmerman, A.L., Barrett, D.L., Petrakis, N.L. and King, M.C. Cytopathology of abnormal mammary duct epithelium. **In:** Proceedings of the Third International Symposium on Detection and Prevention of Cancer. New York, April 29, 1976.

Karpen, J.W., Zimmerman, A.L., Stryer, L., and Baylor, D.A. Molecular mechanics of the cyclic GMP-activated channel of retinal rods. **In:** Cold Spring Harbor Symposium on Quantitative Biology, Vol. 53 (1988).