



Professor Robert Reenan
Department of Molecular and Cellular Biology and Biochemistry
Brown University

Reenan, R.A. and Kolodner, R.D. (1992) Characterization of Insertion Mutations in the *Saccharomyces cerevisiae* *MSH1* and *MSH2* Genes: Evidence for Separate Mitochondrial and Nuclear Functions. *Genetics* **132**: 975-985.

Reenan, R.A. and Kolodner, R.D. (1992) Isolation and Characterization of Two *Saccharomyces cerevisiae* Homologues of the Bacterial *hexA* and *mutS* Mismatch Repair Genes. *Genetics* **132**: 963-973.

Alani, E.; **Reenan, R.A.** and Kolodner, R.D. (1994) Interaction Between Mismatch Repair and Genetic Recombination in *Saccharomyces cerevisiae*. *Genetics* **137**: 19-39.

B. Pittendrigh, **R.A. Reenan**, R. French-Constant and B. Ganetzky (1997) Point Mutations in the *Drosophila para* Voltage Gated Sodium Channel Gene Confer Resistance to DDT and Pyrethroid Insecticides. *Mol Gen Genet* **256**: 602-610.

J.W. Warmke; **R.A. Reenan**; P. Wang; S. Qian; J.P. Arena; J. Wang; D. Wunderler; K. Liu; G.J. Kaczorowski; L.H.T. Van der Ploeg; B. Ganetzky and C.J. Cohen (1997) Functional Expression of *Drosophila para* Sodium Channels: Modulation by the Membrane Protein *tipE* and Toxin Pharmacology. *J. Gen. Physiology* **110**: 119-133.

Reenan, R.A., Hanrahan, C.J. and Ganetzky, B. (2000) The *mle^{naps}* RNA Helicase Mutation in *Drosophila* Results in a Splicing Catastrophe of the *para* Na⁺ Channel Transcript in a Region of RNA editing. *Neuron* **25**: 139-149.

C.J. Hanrahan, M.J. Palladino, B. Ganetzky and **R.A. Reenan** (2000) RNA Editing of the *Drosophila para* Na⁺ Channel Transcript: Evolutionary Conservation and Developmental Regulation. *Genetics* **155**:1149-1160.

M.J. Palladino, L.P. Keegan, M.A. O'Connell and **R.A. Reenan** (2000) *dADAR*, a *Drosophila* Double-stranded RNA-specific Adenosine Deaminase is Highly Developmentally Regulated and is Itself a Target for RNA Editing. *RNA* **6**:1004

R.L. Martin, B. Pittendrigh, J. Liu, **R.A. Reenan**, R. French-Constant and D.A. Hanck. (2000) Point Mutations in Domain III of a *Drosophila* Neuronal Na⁺ Channel Confer Resistance to Allethrin. *Insect Biochem. and Mol. Biol.* **30**: 1051-1059.

M.J. Palladino, L.P. Keegan, M.A. O'Connell and **R.A. Reenan** (2000) A-to-I pre-mRNA Editing In *Drosophila* is Primarily Involved in Adult Nervous System Function and Integrity. Cell **102**:437-449.

B. Rogina, **R.A. Reenan**, Nilsen, S.P. and S.L. Helfand (2000) Extended Life Span Conferred by Cotransporter Gene Mutations in *Drosophila*. Science **290**:2137-2140.

R.A. Reenan (2001) The RNA World Meets Behavior: A-to-I Pre-mRNA Editing in Animals. Trends in Genetics **17(2)**:53-55.

M. Grauso, **R.A. Reenan**, E. Culetto, D.B. Sattelle. (2002) Novel Putative Nicotinic Acetylcholine Receptor Subunit Genes, Da5, Da6 and Da7, in *Drosophila melanogaster* Identify a New and Highly Conserved Target of Adenosine Deaminase Acting on RNA-Mediated A-to-I Pre-mRNA Editing. Genetics **160(4)**:1519-1533

B. Hoopengardner, T. Bhalla, C. Staber, and **R.A. Reenan**. (2003) Nervous System Targets of RNA Editing Identified By Comparative Genomics. Science **301**:832-836.

J. Pedra, A. Hostetler, P. Gaffney, **R.A. Reenan** and B. Pittendrigh. (2004) Hyper-susceptibility to deltamethrin in *para*^{ts1} DDT resistant *Drosophila melanogaster*. Pesticide Biochemistry and Physiology **78**:58-66.

T. Bhalla, J. Rosenthal, M. Holmgren and **R.A. Reenan** (2004) Control of human potassium channel inactivation by editing of a small mRNA hairpin. Nature Structural and Molecular Biology **11**:950-956

J.W. Park, K. Parisky, A.M. Celotto, **R.A. Reenan** and B.R. Graveley (2004). Identification of alternative splicing regulators by RNA interference in *Drosophila*. P.N.A.S **101**:15974-15979.

D. B. Sattelle, A. K. Jones, B. M. Sattelle, K. Matsuda, **R.A. Reenan** and P. C. Biggin (2005) Edit, cut and paste in the nicotinic acetylcholine receptor gene family of *Drosophila melanogaster*. Bioessays **27**: 366-376.

R.A. Reenan (2005) Molecular determinants and guided evolution of species-specific RNA editing. Nature **434**: 409-413.

L.P. Keegan, J. Brindle, A. Gallo, A. Leroy, **R.A. Reenan** and M.A.O'Connell. (2005) Tuning of RNA editing by ADAR is required in *Drosophila*. EMBO Journal **24(12)**: 2183-2193.

H.W. Tedford, F. Maggio, **R.A. Reenan** and G. King. (2007) A model genetic system for testing the *in vivo* function of peptide neurotoxins. Peptides **28(1)**:51-56.

Sixsmith, J. and **R.A. Reenan** (2007) Comparative genomic and bioinformatic approaches for the identification of new adenosine-to-inosine substrates. Methods in Enzymology 424:245-264.

Jepson, J. and **R.A. Reenan** (2007) Genetic approaches to studying adenosine-to-inosine RNA editing. Methods in Enzymology 424 :265-287.

Drosophila 12 Genomes Consortium (Reenan, member) (2007) Evolution of genes and genomes on the *Drosophila* phylogeny. Nature 450:203-218.

Reenan, R.A. and Rogina, B. (2008) Acquired temperature-sensitive paralysis as a biomarker of declining neuronal function in aging *Drosophila*. Aging Cell 7(2):179-186.

Jepson, J.E. and **Reenan, R.A.** (2008) RNA editing in regulating gene expression in the brain. Biochim Biophys Acta. 1779(8):459-470.

Ryan, M.Y., Maloney, R., **Reenan, R.A.** and Horn R. (2008) Characterization of five RNA editing sites in *Shab* potassium channels. Channels 2(3):202-209.

Ingleby, L., Maloney, R., Jepson, J., Horn, R. and **Reenan, R.A.** (2009) Regulated RNA editing and functional epistasis in *Shaker* potassium channels. J Gen Physiol. 133:17-27.

St. Laurent, G., Savva, Y.A and **Reenan R.** (2009) Enhancing non-coding RNA information content with ADAR editing. Neuroscience Letters 466:89-98.

Jepson, J.E. and **Reenan, R.A.** (2009) Adenosine-to-inosine genetic recoding is required in the adult-stage nervous system for coordinated behavior in *Drosophila*. J Biol Chem. 284:31391-31400.

Jepson, J.E. and **Reenan, R.A.** (2010) Unraveling pleiotropic functions of A-to-I RNA editing in *Drosophila*. Fly 4(2):154-8.

Horn, R. and **Reenan, R.** (2010) Channels get in an HUFA: RNA editing gets them out of a jam. EMBO J. 29(13):2097-8.

Staber, C.J., Gell, S., Jepson, J.E. and **Reenan, R.A.** (2011) Perturbing A-to-I RNA Editing Using Genetics and Homologous Recombination. Methods in Molecular Biology 718:41-73.

Jepson JE, Savva YA, Yokose C, Sugden AU, Sahin A, **Reenan RA.** (2011) Engineered alterations in RNA editing modulate complex behavior in *Drosophila*: REGULATORY DIVERSITY OF ADENOSINE DEAMINASE ACTING ON RNA (ADAR) TARGETS. J Biol Chem. 286(10):8325-8337.

Pittendrigh BR, Berenbaum MR, Seufferheld MJ, Margam VM, Strycharz JP, Yoon KS, Sun W, **Reenan R**, Lee SH, Clark JM. (2011) Simplify, simplify: Lifestyle and compact genome of the body louse provide a unique functional genomics opportunity. Commun Integr Biol. 4(2):188-191.

Bhogal B, Jepson JE, Savva YA, Pepper AS, **Reenan RA**, Jongens TA. (2011) Modulation of dADAR-dependent RNA editing by the *Drosophila* fragile X mental retardation protein. Nat Neurosci. 14(12):1517-1524.

Savva YA, Rieder LE, **Reenan RA**. The ADAR protein family. (2012) Genome Biol. 13(12):252. [Epub ahead of print]

Ryan MY, Maloney R, Fineberg JD, **Reenan RA**, Horn R. (2012) RNA editing in eag potassium channels: Biophysical consequences of editing a conserved S6 residue. Channels 6(6):443-52

Sun L, Gilligan J, Staber C, Schutte RJ, Nguyen V, O'Dowd DK, **Reenan R**. (2012) A knock-in model of human epilepsy in *Drosophila* reveals a novel cellular mechanism associated with heat-induced seizure. J Neurosci. 32:14145-55

Savva YA, Jepson JE, Sahin A, Sugden AU, Dorsky JS, Alpert L, Lawrence C, **Reenan RA**. (2012) Auto-regulatory RNA editing fine-tunes mRNA re-coding and complex behaviour in *Drosophila*. Nature Communications 3:790. doi: 10.1038/ncomms1789.

Garber G, Smith LA, **Reenan RA**, Rogina B. (2012) Effect of sodium channel abundance on *Drosophila* development, reproductive capacity and aging. Fly 6(1):57-67.

Jepson JE, Savva YA, Jay KA, **Reenan RA**. (2012) Visualizing adenosine-to-inosine RNA editing in the *Drosophila* nervous system. Nature Methods 25;9(2):189-94.

Rieder LE, **Reenan RA**. (2012) The intricate relationship between RNA structure, editing, and splicing. Semin Cell Dev Biol. 23(3):281-8

Gell S L, **Reenan RA**. (2013) Mutations to the piRNA Pathway Component aubergine Enhance Meiotic Drive of Segregation Distorter in *Drosophila melanogaster*. Genetics. 193(3):771-784.

Rieder LE, Staber CJ, Hoopengardner B, **Reenan RA**. (2013) Tertiary structural elements determine the extent and specificity of messenger RNA editing. Nature Communications. 4:2232. doi: 10.1038/ncomms3232.

St Laurent G, Tackett MR, Nechkin S, Shtokalo D, Antonets D, Savva YA, Maloney R, Kapranov P, Lawrence CE, **Reenan RA**. (2013) Genome-wide analysis of A-to-I RNA editing by single-molecule sequencing in *Drosophila*. *Nat Struct Mol Biol*. 20(11):1333-1339.

Savva YA, Jepson JE, Chang YJ, Whitaker R, Jones BC, St Laurent G, Tackett MR, Kapranov P, Jiang N, Du G, Helfand SL, **Reenan RA**. (2013) RNA editing regulates transposon-mediated heterochromatic gene silencing. *Nature Communications*. 4:2745. doi: 10.1038/ncomms3745.

Zhu C, Chang C, **Reenan RA**, and Helfand SL. (2014) Indy gene variation in natural populations confers fitness advantage and life span extension through transposon insertion. *Aging*. 6(1):58-69.

Reenan, RA (2014) Correcting mutations by RNA repair. *New England Journal of Medicine*. 370(2):172-174.

Savva YA, **Reenan RA**. (2014) Identification of evolutionarily meaningful information within the mammalian RNA editing landscape. *Genome Biol*. 2014 Jan 28;15(1):103.

Schutte RJ, Schutte SS, Algara J, Barragan EV, Gilligan J, Staber C, Savva YA, Smith MA, **Reenan R**, O'Dowd DK. (2014) Knock-in Model of Dravet Syndrome reveals a constitutive and conditional reduction in sodium current. *J Neurophysiol*. 112(4):903-912.

Leila E Rieder, Yiannis A Savva, Matthew A Reyna, Yao-Jen Chang, Jacquelyn S Dorsky, Ali Rezaei and **Robert A Reenan** (2015) Dynamic response of RNA editing to temperature in *Drosophila* *BMC Biology* 2015, 13:1