RETROTOPE

Study of Retrotope's patented deuterated polyunsaturated fatty acid drugs is published in *The FEBS Journal, and shows drugs fully rescue Alzheimer's loss of cognition in a mouse model*.

LOS ALTOS, CA, and Toronto, Canada, October 23, 2017 – Retrotope and collaborators led by Dr. Brian Bennett of Queens University, Kingston, ON, Canada, have published a paper entitled "**Deuterium-reinforced polyunsaturated fatty acids improve cognition in a mouse model of sporadic Alzheimer's disease**" by the *The FEBS Journal.* The full article preprint is available at http://bit.ly/2injUrv

The study's results demonstrate that combinations of Retrotope's deuterated polyunsaturated fatty acid (D-PUFA) drugs rescue multiple cognition deficits in an aldehyde dehydrogenase 2 ($ALDH2^{-/-}$) sporadic Alzheimer's knockout mouse to unaffected wild type performance. Collaborators from Vanderbilt University and the University of Arkansas Stable Isotope Laboratory assisted in analyzing tissues for oxidation markers and tissue drug incorporation.

Dr. Mikhail Shchepinov, CSO and co-founder of Retrotope, commented: "Lipid peroxidation has long been implicated in many neurodegenerative diseases. Retrotope, in this and other publications with collaborators, has been able to show that damage to the critical membrane PUFA lipids is a common pathway to cell death, and that disease can be prevented and even reversed by rendering the lipids resistant to such oxidation. For many reasons, the damaging effects of such oxidation have not been able to be treated by antioxidants. These results suggest that by controlling the lipid peroxidation, the disease may be arrested, and even function recovered."

Dr. Robert Molinari, CEO of Retrotope adds: " The Aldehyde Dehydrogenase deficient sporadic AD mouse displays cognitive characteristics very similar to Alzheimer's disease. Toxic aldehydes known to be associated with Alzheimer's (similar to aldehydes associated with the breakdown of alcohol) require the missing enzyme to be eliminated, and become highly toxic. This is a concern due to the wide prevalence of the aldehyde dehydrogenase deficient genotype in Asian populations, rendering those with the so-called "Asian flushing" mutation susceptible. There is currently no approved therapy that stops or reverses the progression of the disease despite decades of research and clinical trials."

About D-PUFAs

D-PUFAs are patented, orally available, modified fatty-acid therapeutics that stabilize ("fireproof") mitochondrial and cellular membranes against attack and restore cellular health. Retrotope and others have discovered that lipid peroxidation, the free-radical degradation of fatty acids in mitochondrial and cellular membranes, may be the primary source of cell death in several degenerative diseases.

About Retrotope

Retrotope, a privately-held, clinical-stage pharmaceutical company, is creating a new category of drugs to treat degenerative diseases. Composed of proprietary compounds that are chemically stabilized forms of essential nutrients, these compounds are being studied as disease modifying therapies for many intractable diseases such as Parkinson's, Alzheimer's, mitochondrial myopathies, and retinopathies. RT001, Retrotope's first lead candidate, is being tested in clinical trials for the treatment of Friedreich's ataxia, a fatal orphan disease, and in compassionate use studies for a fatal, childhood

neurodegenerative disease called Infantile Neuroaxonal Dystrophy. For more information about Retrotope, please visit www.retrotope.com.

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Retrotope Media Contact
Rick Roose
415-202-4445
roi.roos@gmail.com

SOURCE: Retrotope, Inc.
4300 El Camino Real, Suite 201
Los Altos, CA 94022
650-575-7551