Research Topics

Human stress reactions enable immediate survival yet entail long-term damage spanning neuromuscular, neurodegenerative, and inflammatory diseases. Dr. Soreq pioneers diverse Molecular Biomedicine approaches for exploring the mechanisms underlying stress-associated diseases and develops innovative strategies for alleviating the consequences of traumatic experiences or chemical and inflammatory stresses.

The Cholinergic System: From genes to neurotransmission

Acetylcholine (ACh) is the very first neurotransmitter to be discovered. It links the brain with body functions by performing what we define as Cholinergic Signalling.

"Molecular signatures" of body-to-brain signalling

"Molecular signatures" of body-to-brain signalling may be found by transcriptome analyses of paired leukocyte samples from PD patients (before and after deep brain stimulation) and brain from AD and matched controls.

Cholinergic stress responses

Human stress reactions enable immediate survival yet entail long-term damages spanning neuromuscular, neurodegenerative, and inflammatory diseases.

Mouse models of cholinergic malfunctioning

We have used transgenic mouse models with overexpressed cholinesterase variants as well as PD and AD models to study the involvement of cholinergic signalling in disease pathology and to define brain-to-body links that distinguish protective from damaging effects in specific pathogenic states.

Pre-mRNA and post-transcriptional processing
Pre-mRNA processing (and especially alternative splicing) is intensively used to achieve high molecular complexity, which sustains normal cognitive and behavioural functions and facilitates responses to altered internal and environmental conditions.

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It is now widely accepted that deciphering the enigma of the brain is the most challenging intellectual endeavor of the 21st century, "The Century of the Brain" - Join our quest and become a friend of ELSC.

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Our Int'l Ph.D. program provides outstanding students with top-notch courses in computational neuroscience.

**Studying at ELSC**

The Jerusalem Brain Sciences Building will provide a state-of-the-art research and teaching facility for the Edmond and Lily Safra Center for Brain Sciences.

**The Building**

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