

Resource Summary Report

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Genes to Cognition: Neuroscience Research Programme

RRID:SCR_007121

Type: Tool

Proper Citation

Genes to Cognition: Neuroscience Research Programme (RRID:SCR_007121)

Resource Information

URL: <http://www.genes2cognition.org/>

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Description: A neuroscience research program that studies genes, the brain and behavior in an integrated manner, established to elucidate the molecular mechanisms of learning and memory, and shed light on the pathogenesis of disorders of cognition. Central to G2C investigations is the NMDA receptor complex (NRC/MASC), that is found at the synapses in the central nervous system which constitute the functional connections between neurons. Changes in the receptor and associated components are thought to be in a large part responsible for the phenomenon of synaptic plasticity, that may underlie learning and memory. G2C is addressing the function of synapse proteins using large scale approaches combining genomics, proteomics and genetic methods with electrophysiological and behavioral studies. This is incorporated with computational models of the organization of molecular networks at the synapse. These combined approaches provide a powerful and unique opportunity to understand the mechanisms of disease genes in behavior and brain pathology as well as provide fundamental insights into the complexity of the human brain. Additionally, Genes to Cognition makes available its biological resources, including gene-targeting vectors, ES cell lines, antibodies, and transgenic mice, generated for its phenotyping pipeline. The resources are freely-available to interested researchers.

Synonyms: G2C Neuroscience Research Program, G2C Research Programme, Genes to Cognition: Neuroscience Research Program, Genes to Cognition, G2C, Genes to Cognition - Neuroscience Research Programme, Genes to Cognition-Neuroscience Research Programme, G2C Research Program

Resource Type: topical portal, data or information resource, portal

Keywords: cognition, gene, neuroscience

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MRC ;
BBSRC ;
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Alternate IDs: nif-0000-10235

Record Creation Time: 20220129T080240+0000

Record Last Update: 20260731T042735+0000

Ratings and Alerts

No rating or validation information has been found for Genes to Cognition: Neuroscience Research Programme.

No alerts have been found for Genes to Cognition: Neuroscience Research Programme.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 19 mentions in open access literature.

Listed below are recent publications. The full list is available at [PRECISE-TBI](#) .

Gong Z, et al. (2025) Age-Related Differences in the Choroid Plexus Structural Integrity Are Associated with Changes in Cognition. medRxiv : the preprint server for health sciences.

Okuzono S, et al. (2024) An N-terminal and ankyrin repeat domain interactome of Shank3 identifies the protein complex with the splicing regulator Nono in mice. Genes to cells : devoted to molecular & cellular mechanisms, 29(9), 746.

Fass DM, et al. (2022) Brain-specific deletion of GIT1 impairs cognition and alters phosphorylation of synaptic protein networks implicated in schizophrenia susceptibility. Molecular psychiatry, 27(8), 3272.

Xu D, et al. (2020) Co-localization between Sequence Constraint and Epigenomic Information Improves Interpretation of Whole-Genome Sequencing Data. *American journal of human genetics*, 106(4), 513.

He Z, et al. (2019) A genome-wide scan statistic framework for whole-genome sequence data analysis. *Nature communications*, 10(1), 3018.

Weyn-Vanhentenryck SM, et al. (2018) Precise temporal regulation of alternative splicing during neural development. *Nature communications*, 9(1), 2189.

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Cheng TL, et al. (2017) Regulation of mRNA splicing by MeCP2 via epigenetic modifications in the brain. *Scientific reports*, 7, 42790.

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Darnell JC, et al. (2011) FMRP stalls ribosomal translocation on mRNAs linked to synaptic function and autism. *Cell*, 146(2), 247.

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Whibley AC, et al. (2010) Fine-scale survey of X chromosome copy number variants and indels underlying intellectual disability. *American journal of human genetics*, 87(2), 173.

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Plomin R, et al. (2007) Microarrays. *Developmental science*, 10(1), 19.

Hadley D, et al. (2006) Patterns of sequence conservation in presynaptic neural genes. *Genome biology*, 7(11), R105.

Pocklington AJ, et al. (2006) The proteomes of neurotransmitter receptor complexes form modular networks with distributed functionality underlying plasticity and behaviour. *Molecular systems biology*, 2, 2006.0023.

Anderson CN, et al. (2006) High throughput protein expression screening in the nervous system--needs and limitations. *The Journal of physiology*, 575(Pt 2), 367.