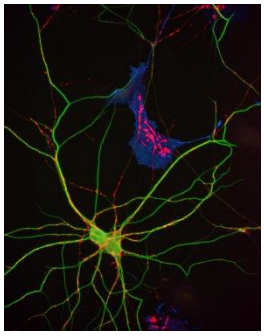
What is the Function of Autism-linked Genes?

Autism Spectrum Disorders (ASD) have a strong genetic link. Certain genes can increase the risk for an individual to develop autism. Recent studies have shown that some of these genes may be those that function at connections between brain cells, called synapses. When changes are made to genes that affect synapses in animal models, changes in their behaviour occur that are similar to some aspects of ASD.



Dr. Craig expresses autism-related genes in brain cells (pictured above) to study how they affect the connections between cells, called synapses.

What is the purpose of the study?

- To understand how new genes recently linked to autism function at synapses in brain cell culture and animal models.

How will the study be done?

- Some aspects of gene functions related to synapses will be studied, such as:
  - Synapse development
  - Changes in synapses that increase or decrease network activity
  - Synapse-organizing properties
- One method of studying these functions is by reducing the expression of the gene in cultured brain cells and animal models, and observing the effect on the synapse.

Why is this study important?

- This study will help in understanding which genes contribute most to risk for ASD, and possibly to which aspects of the disorder
- Understanding biochemical pathways and developing cell culture and animal models for them could lead to the development of treatments for ASD

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