

NEWS

Genetics: Postmortem study links new gene to autism

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Valuable tissue: Post-mortem brain samples allow scientists to study gene expression variations within specific brain regions.

A study of postmortem brain tissue shows that RPP25, a gene on the autism-linked 15q22-26 chromosomal region, is expressed differently in the brains of people with the disorder. This is the first time this gene has been implicated in autism.

In the study, published in August in *Autism Research*, researchers looked for changes in the **expression of 44 protein-coding messages**, or mRNAs, in the prefrontal cortex, a brain region involved in social behavior. They compared the levels of these mRNAs between 15 individuals with the disorder and 15 healthy controls.

To the researchers' surprise, most of the messages they looked at were unchanged in the tissue from people with autism. Only RPP25, a component of the RNA-cleaving enzyme ribonuclease P, showed a statistically significant decrease.

"Any researcher who wants to study this locus and what it means for neurodevelopment might want to include the RPP25 sequence in their experiments," says lead investigator **Schahram Akbarian**, associate professor of psychiatry at the University of Massachusetts Medical School.

RPP25 is preferentially expressed in neurons that produce the chemical messenger gamma-aminobutyric acid, or GABA. GABA inhibits electrical signals in the brain, and a loss of balance between the excitation and inhibition of neurons is believed to be linked to autism.

RPP25 expression also varies during the brain's development, spiking just before birth, which supports its potential role in autism.

Whether and how RPP25 plays a direct role in autism is not yet clear. In addition to detecting the mRNA, the investigators found strong evidence that RPP25 is actively expressed. However, they could not detect any RPP25 protein in either the human prefrontal cortex or the mouse cerebral cortex.