

Animal studies suggest new paths to treating depression

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New animal research has identified factors, such as the stress response and immune system, that may play important roles in depression. Scientists have also found that the regulation of nerve cell signals influences depression in animals, and that new drug combinations may more effectively treat it. The findings were presented at Neuroscience 2010, the annual meeting of the Society for Neuroscience and the world's largest source of emerging news on brain science and health.

Depression is a common mental disorder that affects more than 121 million people worldwide, according to the World Health Organization. Studies show the most effective treatment for moderate or [severe depression](#) is a combination of antidepressant medication and psychotherapy. However, 20 to 40 percent of people with [depression](#) are not helped by existing therapies, highlighting the need for new treatment targets and approaches.

Today's new findings show that:

- An inability to cope with stress may play a role in depression. When placed in stressful situations, zebrafish with a mutation in a receptor important in stress management displayed depression-like behavior, which was reversed when the fish were given Prozac (Herwig Baier, PhD, abstract 884.1, see attached summary).

- The immune system may be a factor in depression. When an immune hormone that carries "sickness" signals to the brain was blocked in mice, the animals showed fewer depression symptoms (Simon Sydserff, PhD, abstract 666.24, see attached summary).
- Mice that lack a molecule involved in regulating nerve cell signals are more active and resilient to [stressful situations](#), behaving the same way as animals given antidepressant drugs. The discovery offers a new target for controlling [brain chemicals](#) involved in mood regulation (James Bibb, PhD, abstract 741.9, see attached summary).
- Two antidepressants may be better than one. A new animal study shows that when drugs that alter two mood-regulating brain chemicals are combined, they produce a greater antidepressant response (Marina Picciotto, PhD, abstract 769.9, see attached summary).

Other recent findings discussed show that:

- Two brain molecules, p11 and brain-derived neurotrophic factor, are key to making antidepressants work. In time, these results might lead to the development of faster-acting antidepressants with fewer side effects (Jennifer Warner-Schmidt, PhD, see attached speaker's summary).

"Finding treatments for disorders of the nervous system is a social imperative," said press conference moderator Robert Greene, MD, PhD, of the University of Texas Southwestern Medical School, an expert in psychiatric disorders. "Basic neuroscience research has formed the basis for significant progress in discovering potentially powerful strategies for new, more effective therapies to combat depression."

More information: www.sfn.org/am2010/press/OmniPress/data/press/004.pdf

Provided by Society for Neuroscience

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