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New link identified for bipolar disorder

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Lithium has been established for more than 50 years as one of the most effective treatments for manic depression, clinically termed bipolar disorder.

However, scientists have never been entirely sure exactly why it is beneficial.

Now, new research from Cardiff University scientists suggests a possible mechanism for why Lithium works, opening the door for better understanding of the illness and potentially more effective treatments.

Laboratory studies with cells have shown that an enzyme known as prolyl oligopeptidase (PO) controls a set of genes that determine sensitivity to lithium. Among these genes is ImpA2, which like PO activity itself, has been associated with differences in some bipolar patients. These results reveal a new mechanistic link that could explain these changes in these patients.

Professor Adrian Harwood of Cardiff School of Biosciences, who led the research, said: "We still cannot say definitively how lithium can help stabilise bipolar disorder. However, our research has uncovered a new cell signalling process with links to bipolar disorder.

"This introduces a new mechanism and more candidate genes whose study could lead to greater understanding of the causes of bipolar disorder, better diagnostic tests and new types of drugs that are more effective and have fewer side effects than Lithium does at present."

The research, funded by the Wellcome Trust, is published in the international journal PLoS ONE.