

A flying boost for neuroscience

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(PhysOrg.com) -- Understanding the causes of autism and schizophrenia could be a step closer for researchers from the Queensland Brain Institute at The University of Queensland after they unravelled the secret world of the wasp genome.

The [neuroscientists](#) were part of an international consortium that has spent four years [sequencing the genome of three parasitic wasp species](#).

Each of the *Nasonia* [wasps](#) is smaller than a pinhead, however they could have an extraordinary impact on the understanding of neurological disorders.

Dr Charles Claudianos is leading a QBI team using information taken from the genomes to study the role of genes, linked to disorders such as autism and schizophrenia.

“These newly sequenced genomes enhance our understanding of genetics and evolution,” Dr Claudianos said.

“They will assist us to better understand how genes common to both humans and insects underpin fundamental cellular and molecular processes, including how the brain works.”

The team will also investigate the genetic and evolutionary relationship between the wasp and the European [honeybee](#) *Apis mellifera*.

QBI researcher Dr Alexandre Cristino said simple organisms, such as the

wasp and honeybee, were ideal for studying our brain as they had a high percentage of genes in common with humans.

“Together these organisms provide important new tools for studying the molecular basis of [brain function](#). Using these insect models, we can now examine the role of genes involved in connecting neurons in the brain,” Dr Cristino said.

Dr Claudianos said the benefits of sequencing the *Nasonia* wasps' genomes was not limited to the laboratory as they had the ability to attack and kill pests by parasitizing their larvae, making the creatures vital to pest control and food production.

“There are over 600,000 species of these parasitoids in nature that can be used in biological control of agricultural pests and insects that transmit disease,” he said.

“Despite their critical role in providing natural control of many pests, most people are unaware of these helpful insects.”

Full details of the sequenced wasps' genomes are published in today's issue of *Science*.

Provided by University of Queensland

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