New source for brain's development found

The brain is made up of two broad cell types, nerve cells or neurons and glia, which are non-nerve cells that make up more than half the volume of the brain. File picture | Photo Credit: Ch. Vijaya Bhaskar

Researchers have discovered an unexpected source for the brain's development, an advance that offers new insights into the building of the nervous system.

They found that glia, a collection of non-neuronal cells that had long been regarded as passive support cells, in fact are vital to nerve cell development in the brain. "The results lead us to revise the often neuro-centric view of brain development to now appreciate the contributions for non-neuronal cells such as glia," said Vilaiwan Fernandes, a postdoctoral fellow at New York University. The findings were published in *Science*.

"Indeed, our study found that fundamental questions in brain development with regard to the timing, identity, and coordination of nerve cell birth can only be understood when the glial contribution is accounted for," said Fernandes, lead author of the study published in the journal *Science*.

The brain is made up of two broad cell types, nerve cells or neurons and glia, which are non-nerve cells that make up more than half the volume of the brain.

Neurobiologists have tended to focus on the former because these are the cells that form networks that process information.

However, given the preponderance of glia in the brain's cellular make-up, the researchers hypothesised that they could play a fundamental part in brain development.

To explore this, they examined the visual system of the fruit fly.

The species serves as a powerful model organism for this line of study because its visual system, like the one in humans, holds repeated mini-circuits that detect and process light over the entire visual field.

This dynamic is of particular interest to scientists because, as the brain develops, it must coordinate the increase of neurons in the retina with other neurons in distant regions of the brain.

Researchers found that the coordination of nerve-cell development is achieved through a population of glia, which relay cues from the retina to the brain to make cells in the brain become nerve cells.

A study of nearly 300 people living in different parts of India found that nine single-base variants (single-nucleotide polymorphisms or SNPs) account

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