

Lab-grown 'mini brains' with neural activity of pre-term infants could boost brain, disease research

Scientists have been trying to grow human organs—including kidneys, livers, skin and guts—from scratch well over a decade. These “organoids” are not fully formed functional organs but miniaturized versions that help researchers model various diseases and test therapies.

It may sound like B-movie pulp, but now scientists have grown a mini brain with neural activity similar to that seen in a preterm infant. ... An organoid functioning like an actual brain could help scientists study a range neurological and psychiatric disorders, such as epilepsy, stroke and schizophrenia.

To grow its organoids, a team at the University of California, San Diego, used human induced pluripotent stem cells. These are cells taken from adult skin or blood that have been reprogrammed into stem cells, which can then be grown into just about any cell in the body, such as kidney or liver cells—or, as in the new study, neurons in the cortex, the part of the brain that controls complex thought and behavior. ...

[T]he clinical potential of cortical organoids is vast. They can be used to model diseases and test various therapies while lessening the need for human and animal research subjects in early trials.

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