Newly discovered from ‘cellular trash pile’ stem cell plays vital role in fetal development

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Researchers at Michigan State University say they have discovered a new kind of stem cell, one that could lead to advances in regenerative medicine as well as offer new ways to study birth defects and other reproductive problems. Tony Parenti, lead author and MSU cell and molecular biology graduate student, unearthed the new cells, induced XEN cells, or iXEN, in a cellular trash pile, of sorts. The research is described in Stem Cell Reports.

“Other scientists may have seen these cells before, but they were considered to be defective, or cancer-like,” said Parenti, who works in the lab of Amy Ralston, Ph.D., MSU biochemist, cell and molecular biologist and co-author of the study. “Rather than ignore these cells that have been mislabeled as waste byproducts, we found gold in the garbage.”

A great deal of stem cell research focuses on new ways to make and use pluripotent stem cells. Pluripotent stem cells can be created by reactivating embryonic genes to “reprogram” mature adult cells. Reprogramming mature cells into induced pluripotent stem cells, or iPSCs, allows them to become malleable building blocks that can morph into any cell in the body.

Prior to the discovery of reprogramming, scientists developed pluripotent stem cells from embryos. However, the embryo produces not only pluripotent stem cells, but also XEN cells, a stem cell type with unique properties. While pluripotent stem cells produce cells in the body, XEN cells produce extraembryonic tissues that play an essential but indirect role in fetal development.

Read full, original post: New Type of Stem Cell Discovered