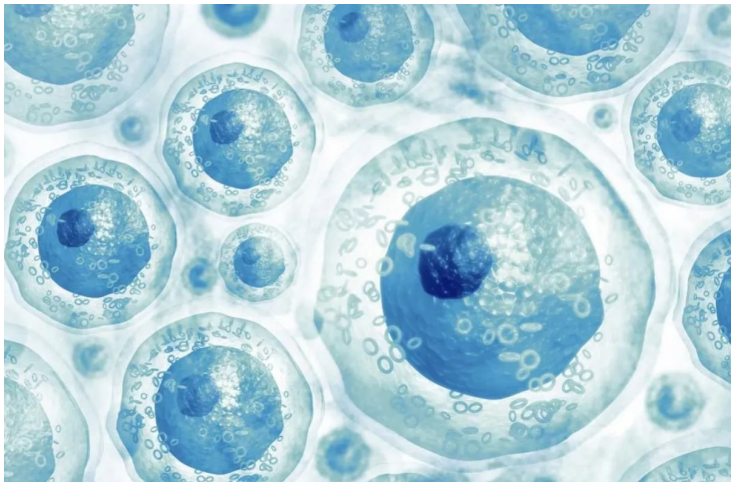
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ASIA EDITION

King Abdullah University of Science and Technology provides new platform for research in reproductive medicine

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Improved stem cell-derived embryo models allow scientists to study processes more reliably in the lab



Researchers at King Abdullah University of Science and Technology (KAUST), Saudi Arabia, have developed a new method to improve how stem cell-derived embryo models are formed and controlled. The study, led by Associate Professor Mo Li, provides novel insights into the earliest stages of human development.

These earliest stages of human development are fundamental to reproductive health and disruptions during this window can lead to infertility, early pregnancy loss, or developmental disorders. Despite decades of research, the mechanism that initiates and drives human embryo formation has not been fully understood.

To study this process, the research team used human stem cell-derived blastoids —laboratory models that replicate key features of early human development— to observe otherwise inaccessible processes in a controlled laboratory setting. Using advanced imaging and molecular analysis, the researchers tracked how the cavity formed as cells reorganized.

Understanding how the blastocoel cavity forms offers critical insight into how early embryos organize themselves at the very start of life.

The research forms part of KAUST's Center of Excellence for Smart Health, which brings together expertise in stem cell biology, regenerative medicine and data-driven research to advance understanding of human health.

By improving the accuracy and reliability of human embryo models, this research provides a powerful new platform for studying these conditions and supporting research in reproductive medicine.