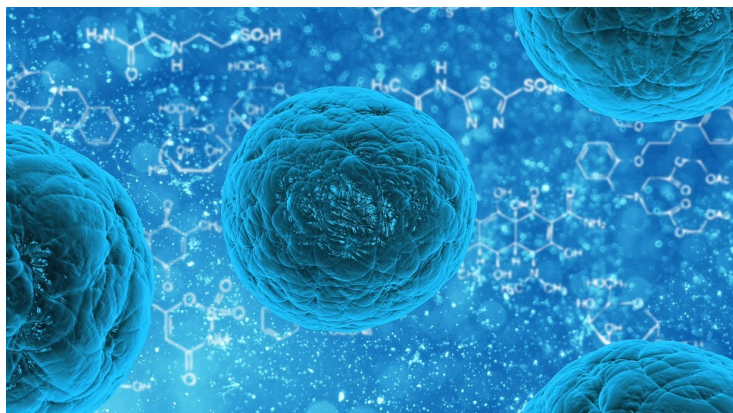


Human colon organoids successfully tissue engineered by scientists

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This breakthrough system of lab grown human colons will allow effective modelling of human ailments and human development.



Singapore - Scientists used human pluripotent stem cells to generate human embryonic colons in a laboratory that function much like natural human tissues when transplanted into mice, according to research published in *Cell Stem Cell*.

The technology allows diseases of the colon to be studied in unprecedented detail in a human modeling system. It also comes with the potential to one day generate human gastrointestinal (GI) tract tissues for transplant into patients, according to James Wells, PhD, senior study investigator and director of the Cincinnati Children's Pluripotent Stem Cell Center.

"Diseases affecting this region of the GI tract are quite prevalent and include ailments like colitis, colon cancer, Irritable Bowel Syndrome, Hirschsprung's disease and polyposis syndromes," Wells said. "We've been limited in how we can study these diseases, including the fact that animal models like mice don't precisely recreate human disease processes in the gastrointestinal tract. This system allows us to very effectively model human diseases and human development."

Like other parts of the GI tract grown by the researchers, the human colon organoids also create a potential new platform for testing new drugs before the start of clinical trials. Most oral drugs are absorbed by the body through the gut.