CRISPR creates mini-organs for disease testing

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis.

Traditionally, gene therapy efforts have attempted to treat genetic diseases by modifying DNA inside a patient's body, but it has been a challenge to deliver the genetic material to all the target tissue, let alone to do so safely.

But in recent years, advances in gene editing and stem cell research have enabled scientists to correct genetic defects in a patient's own cells and grow tissue-specific "organoids" in vitro. These mini organs hold promise for modeling disease, screening drugs, and—potentially—replacing defective tissue in patients.

Advances in CRISPR/Cas9 gene-editing have enabled researchers to easily and accurately make genetic modifications to human DNA. Meanwhile, the ability to reprogram cells into induced pluripotent stem cells and other advances in tissue engineering have enabled scientists to grow a range of different tissues, including mini guts, kidneys, and brains.

Further down the road, it may even be possible to take organoids grown from patient cells that have been edited to correct genetic defects, and re-implant them into the patient to treat diseases like cystic fibrosis.

Read full, original post: With CRISPR, Modeling Disease in Mini Organs