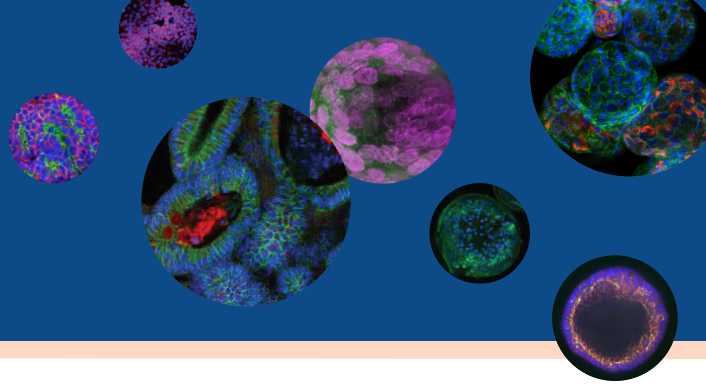
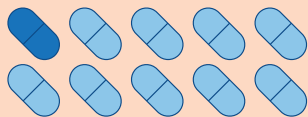


Organoid Impact on Drug Development



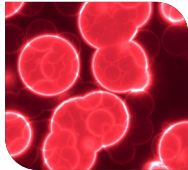
9 out of 10 drugs that emerge from preclinical development go on to fail in clinical trials.



Investing in organoid cultures can improve the success rate of drug trials through more accurate preclinical testing. In drug discovery, organoids are helping scientists improve the biological relevance and accuracy of preclinical drug development while maintaining efficiency and speed. Organoids are also advancing precision medicine, which the **FDA recognizes** as important to the future of therapeutics.

Process Overview

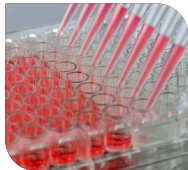
Start with patient-derived material or pluripotent stem cells.



Mix with an ECM, such as **Corning® Matrigel® matrix**.



Plate cells using desired technique or method, such as embedded, sandwich culture, or dome.



Add media, incubate, and maintain culture.



Add drugs for testing.



Obtain readout through microscopy, other imaging methods, or viability assays.

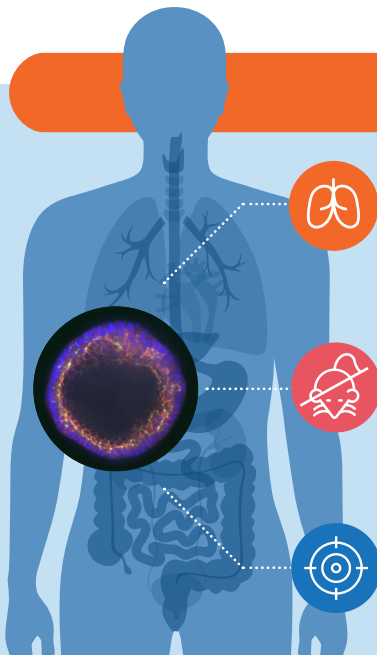


Organoids in Drug Testing

- Contain multiple cell types, better recapitulating physiology and function
- Self-assemble into a 3D structure with different cell layers, **capturing 3D cell-cell** and cell-ECM signaling not present in 2D
- Can include **multiple clones** from a donor, modeling the complex genetics of tumors
- Can capture toxicities not **predicted by 2D toxicology studies**
- More accurate, predictive results may facilitate greater overall efficiency of preclinical development
- More complex setup, but many new tools, techniques, and platforms are simplifying and speeding up organoid workflows



Organoid Facts



Organs with **established organoid protocols** include airway, liver, intestine, heart, brain, pancreas, immune system, and others.



The FDA's **Advancing Alternative Methods** initiative aims to accelerate technologies that can substitute for animal testing, such as 3D cultures, enabling drug developers to seek exemptions under the FDA Modernization Act 2.0.



Organoid technology is advancing scientists' ability to **personalize and predict** individual response to therapy.

CORNING

Warranty/Disclaimer: Unless otherwise specified, all products are for research use or general laboratory use only. Not intended for use in diagnostic or therapeutic procedures. Not for use in humans. For a listing of US medical devices, regulatory classifications or specific information on claims, visit www.corning.com/resources.

For a listing of trademarks, visit www.corning.com/clstrademarks. All other trademarks are the property of their respective owners.

©2024 Corning Incorporated. All rights reserved 9/24 CLS-AN-829