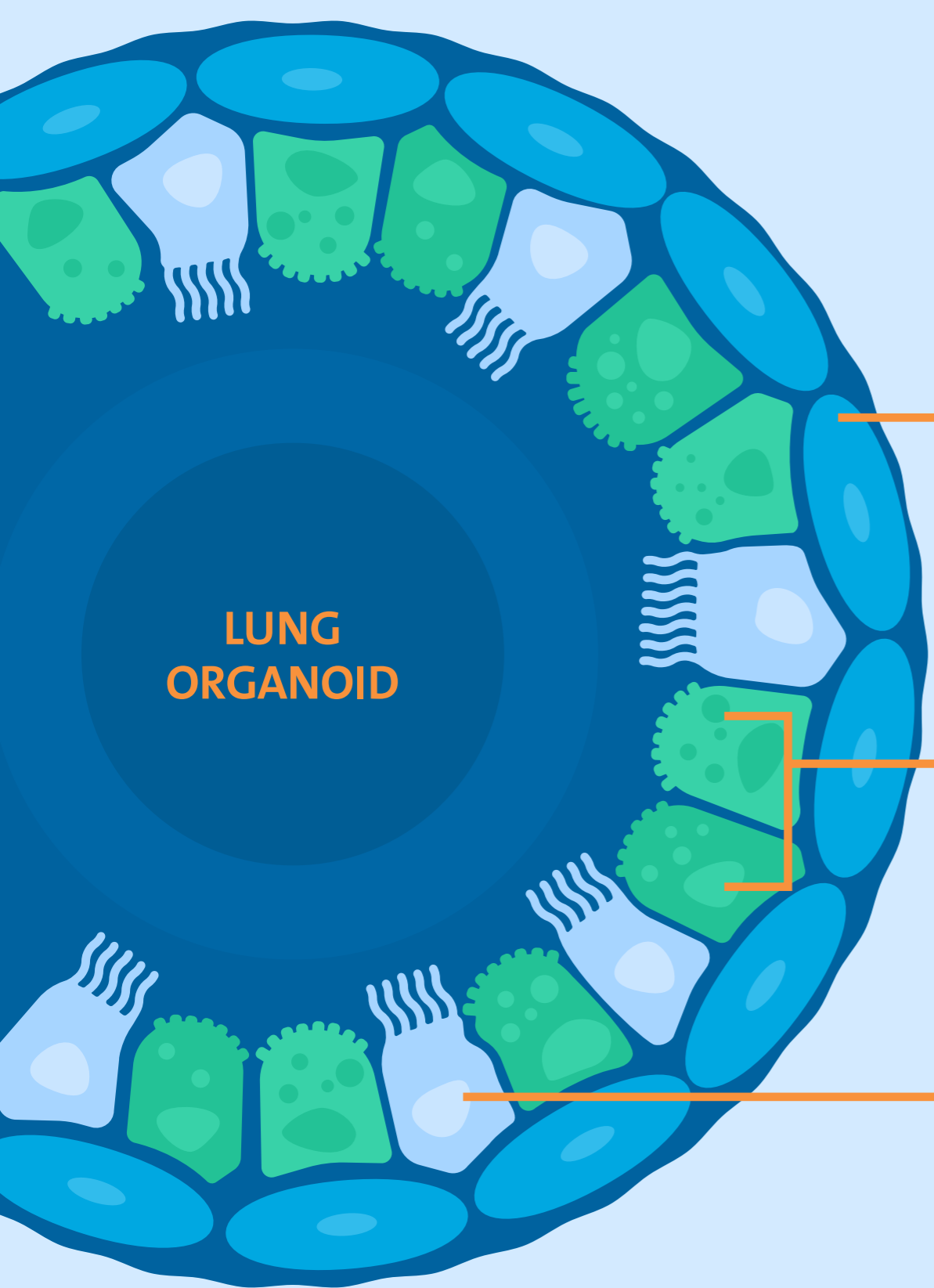




Studying COVID-19 With Lung Organoids

With airway organoids, researchers use *in vitro* versions of human lung material to mimic a SARS-CoV-2 infection. These innovative studies can help reveal better ways to prevent and treat diseases, such as COVID-19.



How a Lung Organoid is Formed

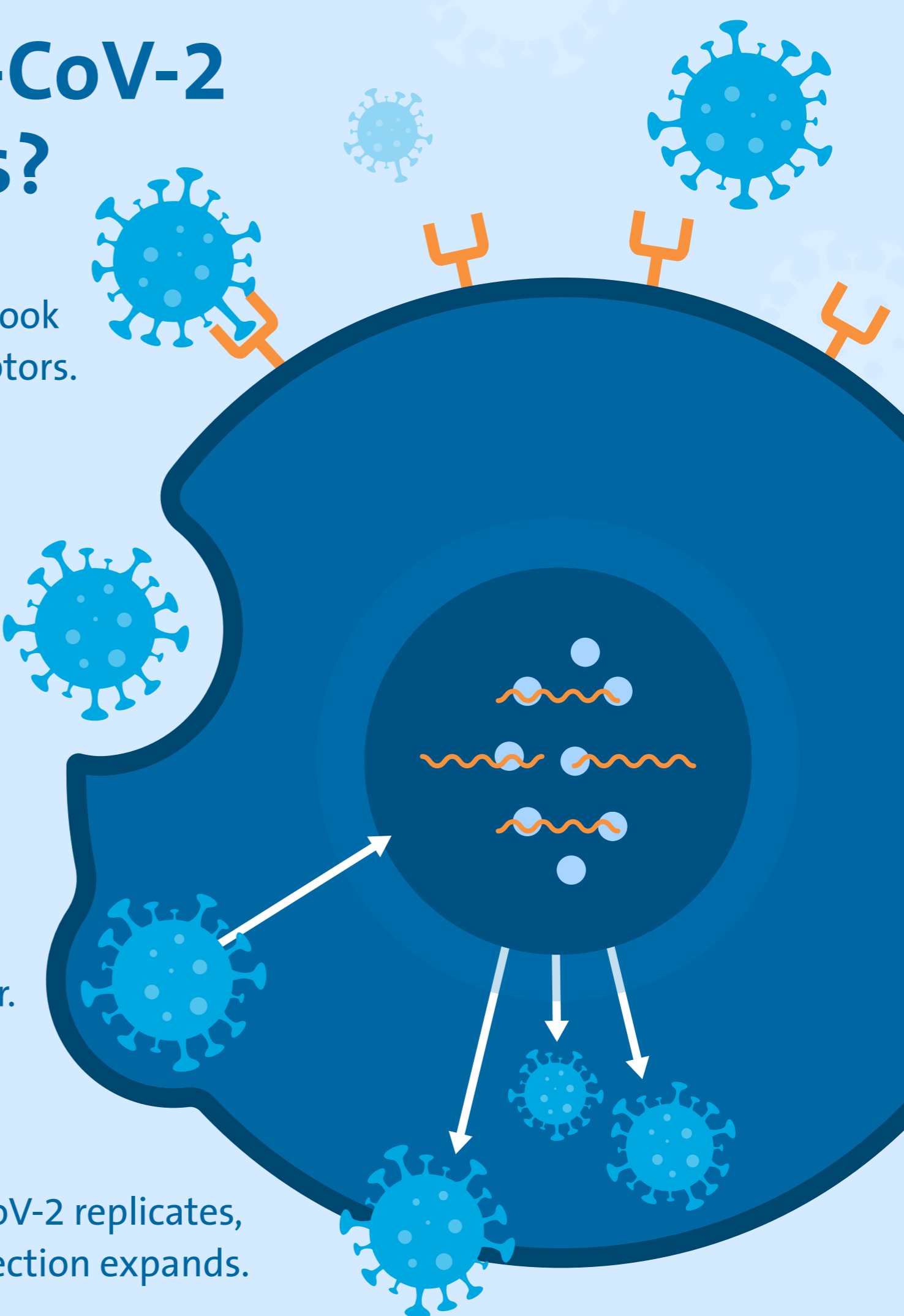
- 1 BASAL CELLS:**
This outer layer of basal cells surrounds the lumen.
- 2 CLUB AND GOBLET CELLS:**
These secretory cells generate mucins that trap microbes and other particles.
- 3 CILIATED CELLS:**
These ciliated cells move trapped substances to the beat of a coordinated rhythm.



Hydrogels, such as Corning® Matrigel® matrix for organoid culture, are a popular scaffold choice to generate organoid models.

How Does SARS-CoV-2 Infect Organoids?

- 1** Spike proteins on the virus hook to the organoid's ACE2 receptors.
- 2** Once bound, the organoid's ACE2 receptors allow viral entry for SARS-CoV-2.
- 3** The viral and organoid membranes fuse together.
- 4** SARS-CoV-2 replicates, and infection expands.



Corning solutions, such as Matrigel matrix, support research to understand diseases like SARS-CoV-2 more completely, as well as the development of more effective therapies and treatments.



Mimic the Disease. Advance the Science.

Organoid models can help mimic *in vivo* conditions so that you can advance the understanding of complex diseases. To order supplies or access technical resources and protocols, visit:

www.corning.com/diseasemodels

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1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5187524/>
2. <https://www.embopress.org/doi/full/10.15252/embj.2019101526>
3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7194977/>
4. <https://www.nature.com/articles/s41579-020-00468-6>
5. <https://www.frontiersin.org/articles/10.3389/fmicb.2020.01818/full>
6. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7337376/>

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