



HUMANOID™ Center of Research Excellence (CoRE) Announcement

Combating COVID-19 at "Phase 0"

Amidst the challenges we are currently facing, we want to take this opportunity to share new ways we can all work together to advance R&D activities on COVID-19 and how the HUMANOID™ Center of Research Excellence (CoRE) is engaging in this critical mission.

Time is of the essence. HUMANOID's R&D team, comprised of fearless staff and trainees, is leading efforts to develop human lung organoids representing all cell types, airway and alveolar cells; in short, they seek to develop a human 'lung-in-a-dish'. Success will enable testing the efficacy of therapeutics in Phase '0' human lung models to pick those that can effectively combat COVID-19. But the HUMANOID™ team is not alone; they are joined in this mission by investigators throughout UCSD, as well as the local and national biotech industry. These joined efforts are critical to advance R&D activities seeking to either validate novel targets or screen existing FDA-approved drugs using our 3D lung models, all with the common goal to translate from Phase '0' to the clinics rapidly. In the works are efforts to add the 4th dimension, i.e., add immune cells to the 2D and 3D lung organoids [\[Click here\]](#). This is only possible because of our colleagues in the Department of Medicine, who are on the frontlines caring for the patients with COVID-19.

HUMANOID™ has effectively brought together UC San Diego's investigators from all walks of disciplines, from cardiothoracic surgery to Pathology, from infectious disease to basic cell biology and virology, from bioengineering to pharmaceutical sciences, all of whom have joined forces to collaborate with a common purpose, i.e., combat COVID-19. It is times like this that brings out the best in all of us.

But such collaborative transdisciplinary team science is not something new for HUMANOID™. Established in April 2019, HUMANOID™ thrives through collaborations within an extensive network of clinicians, industry collaborators and basic scientists, and engineers, both on and off-campus. HUMANOID™ CoRE is dedicated to build and validate pre-clinical human healthy and disease models as platforms for research and drug development, and enable early ex vivo testing for toxicity and efficacy. With few exceptions, all tissues from human, mouse, embryonic, adult, diseased, normal, iPSCs, can be developed into organoids, and subsequently into disease models with a few network-guided tweaks. Our ex vivo models recreate the complexity in vivo by making multi-dimensional organoids [co-culture techniques that capture the 3D of organoid tissues + microbiome + immune or non-immune cells].

HUMANOID™ services include enabling the research community to access and experiment with human primary cells, organoids, organoid- derived monolayers, derivatives of organoids, support sponsored research projects, provide consultation, offer formal and informal education on organoid research and more. We are ready with primary cell platforms to help anybody who has the necessary reagents (e.g., viral protein constructs, attenuated virus, purified spike protein, etc.) and join forces to find solutions to this epidemic crisis.

Check out our latest publication on [Human Gut-in-a-Dish Model Helps Define 'Leaky Gut,' and Outline a Pathway to Treatment](#).

To keep up with our latest announcements and services, and announcements regarding the timeline of our public launch, you may 'follow' us on the [HUMANOID™ CoRE's LinkedIn Page](#).

HUMANOID™ is in UC San Diego's George Palade Laboratories (GPL) for Cellular and Molecular Medicine [Room 238]. For more information and how to contact us and access the CoRE's services, please click on this link to [HUMANOID's iLab portal](#).

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