

# PRODUCT SPOTLIGHT

## HUMAN CANCER MODELS INITIATIVE

### PATIENT-DERIVED CANCER MODELS

As part of our pledge to elevate biological models, ATCC is collaborating with the Human Cancer Models Initiative (HCMI) to offer scientists a wide variety of next-generation 2-D and 3-D patient-derived in vitro cancer models, including organoids and conditionally reprogrammed cells (CRCs). ATCC is committed to making available a growing collection of models generated by the HCMI, which will include both common as well as rare and understudied examples of cancer from numerous tissues. These HCMI models are valuable tools to study cancer, identify and target novel therapies, and facilitate translational cancer research.

To enhance their clinical relevance, the sequence data and patient clinical information for each model is available to the research community.

Various types of 2-D and 3-D models

- All models are human patient-derived
- Diverse genetic backgrounds
- Advanced models such as organoids
- Clinical and sequencing data available via the HCMI portal
- Models from primary, metastatic, and recurrent cancer
- Rare and pediatric cancers included
- Model-specific, easy-to-follow culturing protocols

Patient-derived cancer models of the following physiological systems will be available:

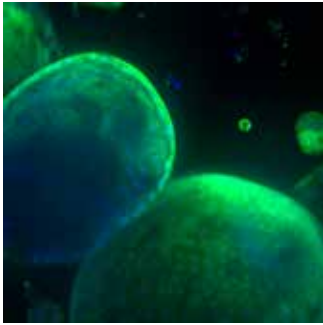
- Circulatory System
- Digestive System
- Excretory System
- Integumentary System
- Musculo-skeletal System
- Nervous System
- Reproductive System
- Respiratory System



[WWW.ATCC.ORG/HCFMI](http://WWW.ATCC.ORG/HCFMI)

## NEXT-GENERATION CANCER MODELS

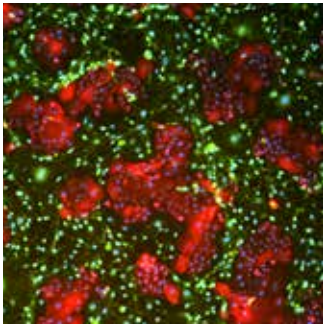
### ORGANOIDS



Organoids are complex, self-organizing microtissues grown embedded within 3-D extracellular matrix. Primary patient-derived organoids have been described for various tissues, healthy and cancerous, including colon, intestine, stomach, breast, esophagus, lung, liver, prostate, and pancreas. Organoids are invaluable pre-clinical models for studying cancer and offer many advantages over existing human or non-human animal cancer models.

- May contain multiple differentiated cell types
- Exhibit cellular *polarization*
- Often possess a central lumen or other *in vivo*-like architecture
- Can remain phenotypically and genotypically stable after long term expansion

### CONDITIONALLY REPROGRAMMED CELLS (CRCs) AND OTHER NON-ORGANOID MODELS

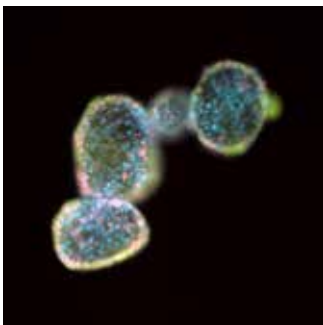


Conditional reprogramming is a cell culture technique that can be used to rapidly and efficiently establish patient-derived cell cultures from both normal and tumor cells. A major advantage of this system is that it:

- Eliminates the need for immortalization via transduction of viral or cellular genes
- Allows the expansion of a patient's tumor cells
- Reverts to differentiated phenotype in physiological culture conditions
- Makes it possible to identify the specific mutations in these cells and to screen the cells for sensitivity to drugs

In addition to CRCs, various other 2-D and 3-D model types, such as neurosphere models, are among the next-generation cancer models offered by the HCMI.

### ABOUT HUMAN CANCER MODELS INITIATIVE (HCMI)



HCMI is an international consortium that is dedicated to generating novel human tumor-derived culture models with associated genomic and clinical data. The HCMI consortium comprises funding agencies and cancer model development institutions. The consortium's funding agencies include:

- National Cancer Institute (NCI)
- Cancer Research UK (CRUK)
- Hubrecht Organoid Technology (HUB)
- Wellcome Sanger Institute (WSI)

NCI-funded model development institutions include the Broad Institute and the Cold Spring Harbor Laboratory. CRUK and WSI co-fund organoid development in the United Kingdom; CRUK provides the patient samples, while WSI derives and sequences the organoid models. The foundation HUB is a Netherlands-based not-for-profit organization that derives and sequences organoid models. ATCC was selected as the sole distributor for the HCMI models. At ATCC the models are authenticated, expanded, preserved, and made available for global distribution. The HCMI model data is provided as an open source to the research community.

Tissue of Origin	Morphology	Disease	ATCC® No.
Ampulla Of Vater	Organoid	Cancer	<a href="#">PDM-369™</a>
Ampulla Of Vater	Organoid	Carcinoma	<a href="#">PDM-218™</a> , <a href="#">PDM-102™</a>
Bone	2-D adherent	Osteosarcoma	<a href="#">PDM-114™</a>
Bone; Metastatic Site: Bone	2-D adherent	Metastatic: bone cancer	<a href="#">PDM-227™</a>
Bone; Metastatic Site: Pleural Cavity	2-D adherent	Ewing sarcoma	<a href="#">PDM-125™</a>
Bone; Metastatic Site: Pleural Cavity	Mixed: adherent and suspension	Ewing sarcoma	<a href="#">PDM-113™</a>
Brain	2-D adherent	Glioblastoma	<a href="#">PDM-23™</a> , <a href="#">PDM-109™</a> , <a href="#">PDM-117™</a> , <a href="#">PDM-121™</a> , <a href="#">PDM-122™</a> , <a href="#">PDM-132™</a> , <a href="#">PDM-141™</a> , <a href="#">PDM-143™</a> , <a href="#">PDM-144™</a> , <a href="#">PDM-147™</a> , <a href="#">PDM-148™</a> , <a href="#">PDM-149™</a> , <a href="#">PDM-153™</a> , <a href="#">PDM-228™</a> , <a href="#">PDM-235™</a> , <a href="#">PDM-242™</a> , <a href="#">PDM-244™</a> , <a href="#">PDM-245™</a> , <a href="#">PDM-297™</a> , <a href="#">PDM-381™</a> , <a href="#">PDM-400™</a> , <a href="#">PDM-402™</a> , <a href="#">PDM-403™</a> , <a href="#">PDM-471™</a>
Brain	Mixed: adherent and suspension	Glioblastoma	<a href="#">PDM-22™</a> , <a href="#">PDM-18™</a> , <a href="#">PDM-123™</a> , <a href="#">PDM-140™</a> , <a href="#">PDM-299™</a> , <a href="#">PDM-300™</a> , <a href="#">PDM-301™</a> , <a href="#">PDM-302™</a> , <a href="#">PDM-320™</a>
Brain	Neurosphere	Glioblastoma	<a href="#">PDM-378™</a> , <a href="#">PDM-379™</a>
Breast	Organoid	Cancer	<a href="#">PDM-92™</a> , <a href="#">PDM-195™</a> , <a href="#">PDM-250™</a> , <a href="#">PDM-350™</a>
Colon	Organoid	Adenocarcinoma	<a href="#">PDM-1™</a> , <a href="#">PDM-45™</a> , <a href="#">PDM-50™</a> , <a href="#">PDM-51™</a> , <a href="#">PDM-57™</a> , <a href="#">PDM-59™</a> , <a href="#">PDM-60™</a> , <a href="#">PDM-61™</a> , <a href="#">PDM-64™</a> , <a href="#">PDM-94™</a> , <a href="#">PDM-95™</a> , <a href="#">PDM-183™</a> , <a href="#">PDM-184™</a> , <a href="#">PDM-186™</a> , <a href="#">PDM-188™</a> , <a href="#">PDM-185™</a> , <a href="#">PDM-256™</a>
Colon	Organoid	Cancer	<a href="#">PDM-46™</a> , <a href="#">PDM-53™</a> , <a href="#">PDM-58™</a> , <a href="#">PDM-255™</a> , <a href="#">PDM-276™</a> , <a href="#">PDM-277™</a> , <a href="#">PDM-356™</a> , <a href="#">PDM-357™</a> , <a href="#">PDM-359™</a> , <a href="#">PDM-363™</a> , <a href="#">PDM-364™</a> , <a href="#">PDM-420™</a> , <a href="#">PDM-422™</a>
Colon	Organoid	Adenoma	<a href="#">PDM-48™</a>
Colon; Metastatic Site: Brain	Mixed: adherent and suspension	Adenocarcinoma	<a href="#">PDM-104™</a> , <a href="#">PDM-386™</a>
Colon; Metastatic Site: Colon	Organoid	Adenocarcinoma	<a href="#">PDM-275™</a>
Colon; Metastatic Site: Liver	Organoid	Adenocarcinoma	<a href="#">PDM-42™</a>
Colorectal	Organoid	Adenoma	<a href="#">PDM-279™</a>
Colorectal	Organoid	Cancer	<a href="#">PDM-274™</a>
Epithelial	2-D adherent	Epithelioid sarcoma	<a href="#">PDM-229™</a> , <a href="#">PDM-236™</a>
Esophagus	Organoid	Adenocarcinoma	<a href="#">PDM-68™</a> , <a href="#">PDM-70™</a> , <a href="#">PDM-71™</a> , <a href="#">PDM-74™</a> , <a href="#">PDM-76™</a> , <a href="#">PDM-77™</a> , <a href="#">PDM-78™</a> , <a href="#">PDM-83™</a> , <a href="#">PDM-124™</a> , <a href="#">PDM-131™</a> , <a href="#">PDM-159™</a>
Esophagus	Organoid	Cancer	<a href="#">PDM-65™</a> , <a href="#">PDM-67™</a> , <a href="#">PDM-72™</a> , <a href="#">PDM-73™</a> , <a href="#">PDM-79™</a> , <a href="#">PDM-120™</a> , <a href="#">PDM-225™</a> , <a href="#">PDM-243™</a>
Esophagus; Metastatic Site: Esophagus	Mixed: adherent and suspension	Cancer	<a href="#">PDM-246™</a>
Esophagus; Metastatic Site: Liver	Organoid	Cancer	<a href="#">PDM-119™</a>
Esophagus; Metastatic Site: Pleural Cavity	Organoid	Cancer	<a href="#">PDM-158™</a>
Extrahepatic Bile Duct	Organoid	Adenocarcinoma	<a href="#">PDM-216™</a> , <a href="#">PDM-217™</a> , <a href="#">PDM-220™</a>
Gall bladder: IPMN	Organoid	Benign neoplasm premalignant	<a href="#">PDM-273™</a>
Kidney	2-D adherent	Wilms tumor	<a href="#">PDM-182™</a>
Liver	Organoid	Cholangiocarcinoma	<a href="#">PDM-219™</a>
Lung	2-D adherent	Cancer	<a href="#">PDM-305™</a>
Lung	Organoid	Adenocarcinoma	<a href="#">PDM-3™</a>
Lung, Derived From Metastatic Site: Brain	Mixed: adherent and suspension	Cancer	<a href="#">PDM-112™</a> , <a href="#">PDM-154™</a>
Pancreas	Organoid	Adenocarcinoma	<a href="#">PDM-25™</a> , <a href="#">PDM-26™</a> , <a href="#">PDM-27™</a> , <a href="#">PDM-28™</a> , <a href="#">PDM-29™</a> , <a href="#">PDM-32™</a> , <a href="#">PDM-33™</a> , <a href="#">PDM-34™</a> , <a href="#">PDM-35™</a> , <a href="#">PDM-36™</a> , <a href="#">PDM-38™</a> , <a href="#">PDM-39™</a> , <a href="#">PDM-40™</a> , <a href="#">PDM-41™</a> , <a href="#">PDM-101™</a> , <a href="#">PDM-108™</a> , <a href="#">PDM-126™</a> , <a href="#">PDM-137™</a> , <a href="#">PDM-138™</a> , <a href="#">PDM-179™</a> , <a href="#">PDM-168™</a>

Tissue of Origin	Morphology	Disease	ATCC® No.
Pancreas	Organoid	Cancer	<a href="#">PDM-24™</a> , <a href="#">PDM-30™</a> , <a href="#">PDM-37™</a> , <a href="#">PDM-31™</a> , <a href="#">PDM-90™</a> , <a href="#">PDM-198™</a> , <a href="#">PDM-421™</a> , <a href="#">PDM-423™</a>
Pancreas; Metastatic Site: Liver	Organoid	Cancer	<a href="#">PDM-107™</a> , <a href="#">PDM-288™</a>
Pancreas; Metastatic Site: Liver	Organoid	Adenocarcinoma	<a href="#">PDM-106™</a>
Pancreas; Metastatic Site: Lymph Node	Organoid	Cancer	<a href="#">PDM-223™</a>
Pancreas; Metastatic Site: Pleural Cavity	Organoid	Adenocarcinoma	<a href="#">PDM-170™</a>
Rectosigmoid Junction	Organoid	Adenocarcinoma	<a href="#">PDM-6™</a> , <a href="#">PDM-100™</a> , <a href="#">PDM-264™</a>
Rectum	Organoid	Adenocarcinoma	<a href="#">PDM-43™</a> , <a href="#">PDM-47™</a> , <a href="#">PDM-62™</a>
Rectum	Organoid	Adenoma	<a href="#">PDM-44™</a>
Rectum	Organoid	Cancer	<a href="#">PDM-97™</a> , <a href="#">PDM-103™</a> , <a href="#">PDM-190™</a> , <a href="#">PDM-191™</a> , <a href="#">PDM-254™</a> , <a href="#">PDM-257™</a> , <a href="#">PDM-258™</a> , <a href="#">PDM-263™</a>
Rectum; Metastatic Site: Liver	Organoid	Adenocarcinoma	<a href="#">PDM-9™</a>
Sigmoid Colon	Organoid	Adenocarcinoma	<a href="#">PDM-2™</a> , <a href="#">PDM-4™</a> , <a href="#">PDM-5™</a> , <a href="#">PDM-7™</a> , <a href="#">PDM-8™</a>
Skin	2-D adherent	Melanoma	<a href="#">PDM-282™</a> , <a href="#">PDM-384™</a> , <a href="#">PDM-392™</a> , <a href="#">PDM-473™</a> , <a href="#">PDM-478™</a> , <a href="#">PDM-481™</a> , <a href="#">PDM-484™</a> , <a href="#">PDM-487™</a> , <a href="#">PDM-494™</a> , <a href="#">PDM-498™</a>
Skin; Metastatic Site: Lymph Node	2-D adherent	Melanoma	<a href="#">PDM-284™</a> , <a href="#">PDM-285™</a> , <a href="#">PDM-291™</a> , <a href="#">PDM-293™</a> , <a href="#">PDM-294™</a> , <a href="#">PDM-313™</a> , <a href="#">PDM-319™</a> , <a href="#">PDM-387™</a> , <a href="#">PDM-388™</a>
Skin; Metastatic Site: Skin	2-D adherent	Melanoma	<a href="#">PDM-292™</a> , <a href="#">PDM-389™</a>
Small Intestine	Organoid	Adenoma	<a href="#">PDM-368™</a>
Small Intestine	Organoid	Cancer	<a href="#">PDM-272™</a>
Soft Tissue; Metastatic Site: Pleural Cavity	Mixed: adherent and suspension	Rhabdomyosarcoma	<a href="#">PDM-129™</a>
Soft Tissue; Metastatic Site: Soft Tissue	2-D adherent	Epithelioid sarcoma	<a href="#">PDM-230™</a>
Soft Tissue; Metastatic Site: Pleural Cavity	2-D adherent	Rhabdomyosarcoma	<a href="#">PDM-238™</a> , <a href="#">PDM-290™</a>
Stomach	Organoid	Adenocarcinoma	<a href="#">PDM-136™</a> , <a href="#">PDM-162™</a> , <a href="#">PDM-233™</a>
Stomach	Organoid	Cancer	<a href="#">PDM-146™</a> , <a href="#">PDM-226™</a> , <a href="#">PDM-315™</a> , <a href="#">PDM-316™</a>
Stomach; Metastatic Site: Lymph Node	Organoid	Adenocarcinoma	<a href="#">PDM-135™</a>
Stomach; Metastatic Site: Pleural Cavity	Organoid	Cancer	<a href="#">PDM-161™</a>
Stomach; Metastatic Site: Pleural Cavity	Organoid	Adenocarcinoma	<a href="#">PDM-116™</a>
Stomach; Metastatic Site: Pleural Cavity	Mixed: adherent and suspension	Cancer	<a href="#">PDM-163™</a>

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