

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:

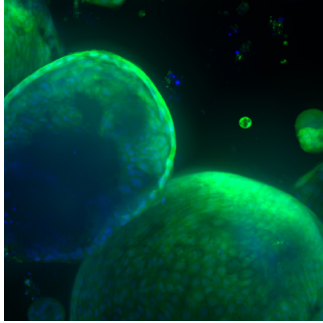
- Circulatory System
- Digestive System
- Excretory System
- Integumentary System
- Musculo-skeletal System
- Nervous System
- Reproductive System
- Respiratory System



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NEXT-GENERATION CANCER MODELS

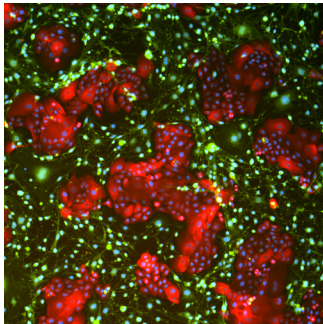
ORGANOIDS



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

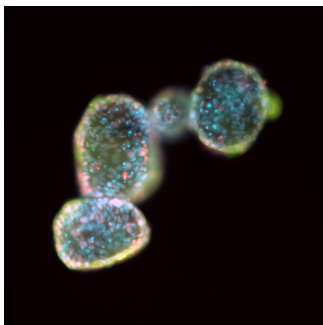


Conditional reprogramming is a cell culture technique that can be used to rapidly and efficiently establish patient-derived cell cultures from both normal and tumor cells. A major advantage of this system is that it:

- 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	PDM-369™ , PDM-445™
Ampulla Of Vater	Organoid	Carcinoma	PDM-218™ , PDM-102™
Bone	2-D adherent	Osteosarcoma	PDM-114™
Bone; Metastatic Site: Bone	2-D adherent	Metastatic: bone cancer	PDM-227™
Bone; Metastatic Site: Pleural Cavity	2-D adherent	Ewing sarcoma	PDM-125™
Bone; Metastatic Site: Pleural Cavity	Mixed: adherent and suspension	Ewing sarcoma	PDM-113™
Brain	2-D adherent	Glioblastoma	PDM-16™ , PDM-17™ , PDM-19™ , PDM-20™ , PDM-21™ , PDM-23™ , PDM-109™ , PDM-117™ , PDM-121™ , PDM-122™ , PDM-132™ , PDM-141™ , PDM-143™ , PDM-144™ , PDM-147™ , PDM-148™ , PDM-149™ , PDM-153™ , PDM-228™ , PDM-235™ , PDM-242™ , PDM-244™ , PDM-245™ , PDM-297™ , PDM-381™ , PDM-400™ , PDM-402™ , PDM-403™ , PDM-471™ , PDM-472™ , PDM-475™ , PDM-499™ , PDM-501™ , PDM-502™ , PDM-503™
Brain	Mixed: adherent and suspension	Glioblastoma	PDM-22™ , PDM-18™ , PDM-123™ , PDM-140™ , PDM-299™ , PDM-300™ , PDM-301™ , PDM-302™ , PDM-320™ , PDM-505™
Brain	Neurosphere	Glioblastoma	PDM-378™ , PDM-379™
Brain	3-D other	Glioblastoma	PDM-504™
Breast	Organoid	Cancer	PDM-92™ , PDM-195™ , PDM-250™ , PDM-350™ , PDM-411™
Colon	Organoid	Adenocarcinoma	PDM-1™ , PDM-45™ , PDM-50™ , PDM-51™ , PDM-52™ , PDM-54™ , PDM-56™ , PDM-57™ , PDM-59™ , PDM-60™ , PDM-61™ , PDM-64™ , PDM-94™ , PDM-95™ , PDM-183™ , PDM-184™ , PDM-185™ , PDM-186™ , PDM-188™ , PDM-256™
Colon	Organoid	Adenoma	PDM-48™
Colon	Organoid	Cancer	PDM-46™ , PDM-53™ , PDM-58™ , PDM-255™ , PDM-276™ , PDM-277™ , PDM-356™ , PDM-357™ , PDM-359™ , PDM-363™ , PDM-364™ , PDM-420™ , PDM-422™ , PDM-513™
Colon; Metastatic Site: Brain	Mixed: adherent and suspension	Adenocarcinoma	PDM-104™ , PDM-386™
Colon; Metastatic Site: Colon	Organoid	Adenocarcinoma	PDM-275™
Colon; Metastatic Site: Liver	Organoid	Adenocarcinoma	PDM-42™
Colorectal	Organoid	Adenoma	PDM-279™
Colorectal	Organoid	Cancer	PDM-274™
Connective tissue	2-D adherent	Primary Desmoid Tumor	PDM-625™
Endometrium	Organoid	Cancer	PDM-528™ , PDM-587™
Epithelial	2-D adherent	Epithelioid sarcoma	PDM-229™ , PDM-236™
Esophagus	Organoid	Adenocarcinoma	PDM-68™ , PDM-70™ , PDM-71™ , PDM-74™ , PDM-75™ , PDM-76™ , PDM-77™ , PDM-78™ , PDM-80™ , PDM-81™ , PDM-82™ , PDM-83™ , PDM-84™ , PDM-85™ , PDM-86™ , PDM-124™ , PDM-131™ , PDM-150™
Esophagus	Organoid	Cancer	PDM-65™ , PDM-67™ , PDM-72™ , PDM-73™ , PDM-79™ , PDM-87™ , PDM-120™ , PDM-225™ , PDM-243™ , PDM-339™ , PDM-469™ , PDM-512™
Esophagus; Metastatic Site: Esophagus	Mixed: adherent and suspension	Cancer	PDM-246™
Esophagus; Metastatic Site: Esophagus	Organoid	Cancer; Metastatic	PDM-468™ , PDM-488™
Esophagus; Metastatic Site: Liver	Organoid	Cancer	PDM-119™
Esophagus; Metastatic Site: Peritoneum	Organoid	Cancer	PDM-470™

Tissue of Origin	Morphology	Disease	ATCC® No.
Esophagus; Metastatic Site: Pleural Cavity	Organoid	Cancer	PDM-158™
Esophagus; Metastatic Site: Stomach	Organoid	Cancer	PDM-490™
Extrahepatic Bile Duct	Organoid	Adenocarcinoma	PDM-216™ , PDM-217™ , PDM-220™
Gall bladder: IPMN	Organoid	Benign neoplasm premalignant	PDM-273™
Head and Neck	Organoid	Cancer	PDM-428™
Kidney	2-D adherent	Wilms tumor	PDM-115™ , PDM-182™
Large intestine; Rectum	Organoid	Adenocarcinoma	PDM-49™
Liver	Organoid	Cholangiocarcinoma	PDM-219™
Lung	2-D adherent	Cancer	PDM-305™
Lung	Organoid	Adenocarcinoma	PDM-3™
Lung	Organoid	Cancer	PDM-683™ , PDM-685™
Lung, Derived From Metastatic Site: Brain	Mixed: adherent and suspension	Cancer	PDM-112™ , PDM-154™
Malignant neoplasm of thyroid; metastatic site: pleural fluid	2-D adherent	Malignant Neoplasm	PDM-662™
Neck	Organoid	Cancer	PDM-440™ , PDM-431™
Ovary	Organoid	Cancer	PDM-514™ , PDM-515™
Pancreas	Organoid	Adenocarcinoma	PDM-25™ , PDM-26™ , PDM-27™ , PDM-28™ , PDM-29™ , PDM-32™ , PDM-33™ , PDM-34™ , PDM-35™ , PDM-36™ , PDM-38™ , PDM-39™ , PDM-40™ , PDM-41™ , PDM-101™ , PDM-108™ , PDM-110™ , PDM-126™ , PDM-134™ , PDM-137™ , PDM-138™ , PDM-165™ , PDM-166™ , PDM-167™ , PDM-168™ , PDM-169™ , PDM-173™ , PDM-179™ , PDM-197™ , PDM-200™ , PDM-201™ , PDM-204™ , PDM-221™ , PDM-222™ , PDM-289™
Pancreas	Organoid	Cancer	PDM-24™ , PDM-30™ , PDM-37™ , PDM-31™ , PDM-90™ , PDM-198™ , PDM-203™ , PDM-205™ , PDM-270™ , PDM-421™ , PDM-423™
Pancreas; Metastatic site: Pancreas	Organoid	Adenocarcinoma	PDM-171™
Pancreas; Metastatic Site: Liver	Organoid	Adenocarcinoma	PDM-106™
Pancreas; Metastatic Site: Liver	Organoid	Cancer	PDM-107™ , PDM-288™
Pancreas; Metastatic Site: Lymph Node	Organoid	Cancer	PDM-223™
Pancreas; Metastatic Site: Peritoneum	Organoid	Adenocarcinoma	PDM-164™
Pancreas; Metastatic Site: Pleural Cavity	Organoid	Adenocarcinoma	PDM-170™
Rectosigmoid Junction	Organoid	Adenocarcinoma	PDM-6™ , PDM-100™ , PDM-264™
Rectum	Organoid	Adenocarcinoma	PDM-43™ , PDM-47™ , PDM-55™ , PDM-62™ , PDM-63™ , PDM-96™
Rectum	Organoid	Adenoma	PDM-44™
Rectum	Organoid	Cancer	PDM-9™ , PDM-97™ , PDM-103™ , PDM-190™ , PDM-191™ , PDM-254™ , PDM-257™ , PDM-258™ , PDM-263™ , PDM-330™ , PDM-331™
Sigmoid Colon	Organoid	Adenocarcinoma	PDM-2™ , PDM-4™ , PDM-5™ , PDM-7™ , PDM-8™
Skin	2-D adherent	Melanoma	PDM-281™ , PDM-282™ , PDM-384™ , PDM-392™ , PDM-395™ , PDM-473™ , PDM-478™ , PDM-481™ , PDM-484™ , PDM-487™ , PDM-494™ , PDM-498™
Skin	2-D adherent	Melanoma; Metastatic	PDM-485™ , PDM-495™
Skin; Metastatic Site: Lymph Node	2-D adherent	Melanoma	PDM-284™ , PDM-285™ , PDM-291™ , PDM-293™ , PDM-294™ , PDM-313™ , PDM-319™ , PDM-387™ , PDM-388™
Skin; Metastatic Site: Skin	2-D adherent	Melanoma	PDM-292™ , PDM-389™


Tissue of Origin	Morphology	Disease	ATCC® No.
Small Intestine	Organoid	Adenoma	PDM-368™
Small Intestine	Organoid	Cancer	PDM-272™ , PDM-374™
Soft Tissue; Metastatic Site: Pleural Cavity	2-D adherent	Rhabdomyosarcoma	PDM-238™ , PDM-290™
Soft Tissue; Metastatic Site: Pleural Cavity	Mixed: adherent and suspension	Rhabdomyosarcoma	PDM-129™
Soft Tissue; Metastatic Site: Soft Tissue	2-D adherent	Epithelioid sarcoma	PDM-230™
Soft Tissue; Metastatic Site: Soft Tissue	2-D adherent	Malignant Neoplasm	PDM-609™
Stomach	Organoid	Adenocarcinoma	PDM-136™ , PDM-162™ , PDM-233™
Stomach	Organoid	Cancer	PDM-146™ , PDM-226™ , PDM-308™ , PDM-315™ , PDM-316™ , PDM-376™ , PDM-377™ , PDM-519™
Stomach	Organoid	Cancer; Metastatic	PDM-323™ , PDM-489™
Stomach; Metastatic Site: Lymph Node	Organoid	Adenocarcinoma	PDM-135™
Stomach; Metastatic Site: Pleural Cavity	Organoid	Cancer	PDM-161™
Stomach; Metastatic Site: Pleural Cavity	Organoid	Adenocarcinoma	PDM-116™
Stomach; Metastatic Site: Pleural Cavity	Mixed: adherent and suspension	Cancer	PDM-163™
Uterus; Endometrium	Organoid	Cancer	PDM-589™

ORGANOID GROWTH KITS


ATCC® No.	Growth Kit Name	Applicable Organoid ATCC® No.
ACS-7100™	Organoid Growth Kit 1A Noggin 25 ug EGF 12.5 ug SB202190 830ug A83-1 53 ug Nicotinamide 310 mg N-acetyl cysteine 51 mg Gastrin 5.5 ug	PDM-1™ , PDM-2™ , PDM-4™ , PDM-5™ , PDM-6™ , PDM-7™ , PDM-8™ , PDM-9™ , PDM-64™ , PDM-94™ , PDM-95™ , PDM-96™ , PDM-97™ , PDM-100™ , PDM-103™ , PDM-183™ , PDM-184™ , PDM-185™ , PDM-186™ , PDM-188™ , PDM-190™ , PDM-191™ , PDM-254™ , PDM-255™ , PDM-256™ , PDM-257™ , PDM-258™ , PDM-263™ , PDM-264™ , PDM-272™ , PDM-273™ , PDM-274™ , PDM-275™ , PDM-276™ , PDM-277™ , PDM-279™ , PDM-356™ , PDM-357™ , PDM-359™ , PDM-363™ , PDM-364™ , PDM-420™ , PDM-422™
ACS-7101™	Organoid Growth Kit 1B Noggin 25 ug EGF 12.5 ug A83-01 53 ug Nicotinamide 310 mg N-acetyl cysteine 51 mg FGF-10 25 ug Gastrin 5.5 ug	PDM-24™ , PDM-25™ , PDM-27™ , PDM-28™ , PDM-29™ , PDM-30™ , PDM-31™ , PDM-32™ , PDM-33™ , PDM-34™ , PDM-35™ , PDM-36™ , PDM-38™ , PDM-39™ , PDM-40™ , PDM-41™ , PDM-90™ , PDM-101™ , PDM-106™ , PDM-107™ , PDM-108™ , PDM-116™ , PDM-119™ , PDM-120™ , PDM-124™ , PDM-126™ , PDM-131™ , PDM-135™ , PDM-136™ , PDM-137™ , PDM-138™ , PDM-146™ , PDM-158™ , PDM-159™ , PDM-161™ , PDM-162™ , PDM-165™ , PDM-166™ , PDM-167™ , PDM-168™ , PDM-169™ , PDM-170™ , PDM-171™ , PDM-173™ , PDM-179™ , PDM-198™ , PDM-216™ , PDM-217™ , PDM-218™ , PDM-219™ , PDM-220™ , PDM-221™ , PDM-222™ , PDM-223™ , PDM-226™ , PDM-233™ , PDM-246™ , PDM-288™ , PDM-315™ , PDM-316™ , PDM-323™ , PDM-368™ , PDM-369™ , PDM-421™ , PDM-423™ , PDM-468™ , PDM-488™
ACS-7102™	Organoid Growth Kit 1C Noggin 12.5 ug SB202190 100 ug A83-01 530 ug Nicotinamide 310 mg N-acetyl cysteine 51 mg FGF-10 12.5 ug FGF-7 1.25 ug	PDM-3™
ACS-7103™	Organoid Growth Kit 1D Noggin 25 ug EGF 12.5 ug SB202190 249 ug A83-01 53 ug Nicotinamide 310 mg N-acetyl cysteine 51 mg Gastrin 5.5 ug PGE2 1 ug	PDM-42™ , PDM-43™ , PDM-44™ , PDM-45™ , PDM-46™ , PDM-47™ , PDM-48™ , PDM-50™ , PDM-51™ , PDM-52™ , PDM-53™ , PDM-54™ , PDM-56™ , PDM-57™ , PDM-58™ , PDM-59™ , PDM-60™ , PDM-61™ , PDM-62™ , PDM-68™
ACS-7104™	Organoid Growth Kit 1E Noggin 25 ug EGF 12.5 ug SB202190 249 ug Nicotinamide 310 mg N-acetyl cysteine 51 mg FGF-10 25 ug A83-01 53 ug	PDM-65™ , PDM-67™ , PDM-70™ , PDM-71™ , PDM-72™ , PDM-73™ , PDM-74™ , PDM-76™ , PDM-77™ , PDM-78™ , PDM-79™ , PDM-83™ , PDM-85™ , PDM-87™ , PDM-243™ , PDM-339™

ORGANOID GROWTH KITS

ATCC® No.	Growth Kit Name	Applicable Organoid ATCC® No.
ACS-7105™	Organoid Growth Kit 1F Noggin 25 ug EGF 1.25 ug A83-01 53 ug Nicotinamide 310 mg N-acetyl cysteine 51 mg FGF-10 5 ug FGF-7 1.25 ug Heregulin B 9.25 ug SB202190 100 ug	PDM-92™ , PDM-195™ , PDM-250™ , PDM-350™ , PDM-376™ , PDM-411™ , PDM-512™ , PDM-519™
ACS-7106™	Organoid Growth Kit 1G EGF 12.5 ug Nicotinamide 310 mg N-acetyl cysteine 51 mg FGF-10 25 ug Gastrin 5.5 ug	PDM-37™ , PDM-102™

 10801 University Boulevard
Manassas, Virginia 20110-2209

 703.365.2700

 703.365.2701

 sales@atcc.org

 www.atcc.org

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