THE ESSENTIALS OF
LIFE SCIENCE RESEARCH
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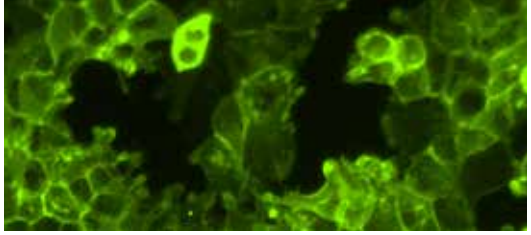
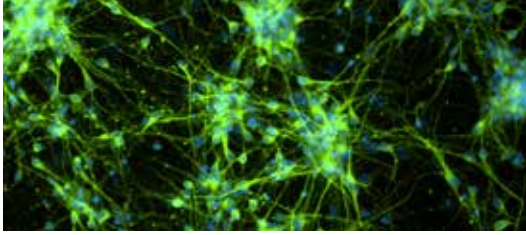
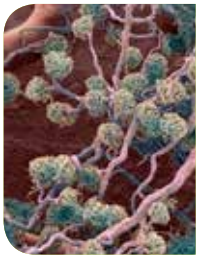




ATCC® TOXICOLOGY TOOLS

ATCC provides the tools needed to explore lung, skin, cardiovascular, gastro-enteric, liver, kidney, and neural toxicity for such applications as high-content screening, 3D culture, spheroid culture, permeability assays, metabolic stability and survival, and more. We offer 4,000 continuous human and animal cell lines, representing all of the organs and tissues of the body. We also provide cell viability assays to identify responses to environmental insults or to screen pharmaceutical compounds. Some of our featured toxicology products include:



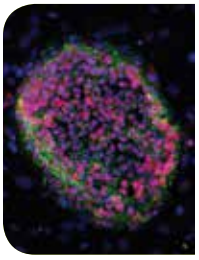
Kidney Cell Models

OAT1 and OCT2-expressing hTERT-immortalized RPTEC

OAT1-expressing HEK 293T/17

Continuous Cell Lines, Growth Media, and Supplements

www.atcc.org/tox



Stem Cell Solutions

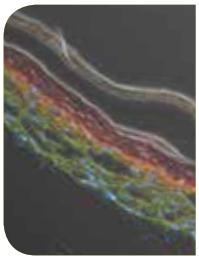
Mesenchymal Stem Cells

Neural Progenitor Cells

Induced Pluripotent Stem Cells

Serum- and Feeder-free Media

www.atcc.org/stemcells



Complete Primary Cell Solutions

Human Airway, Renal, Epidermal, and More

Complete Growth Media and Supplements

hTERT-immortalized Primary Cells

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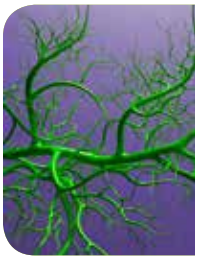

Angiogenesis Resources

Angio-***Ready***™ Angiogenesis Assay System

Primary Endothelial and Smooth Muscle Cells

Cardiovascular Cell Lines

CellMatrix Basement Membrane Gel

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Cell Health & Viability Assays

MTT and XTT Assays

Reliablue™ Cell Viability Reagent

Mycoplasma Detection Kit

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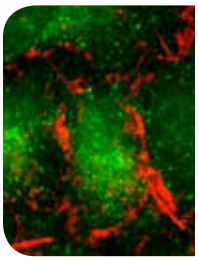

CRISPR/Cas9-Gene Edited Isogenic Cell Lines

EML4-ALK Fusion A549 Isogenic Cell Line
KRAS & NRAS Mutant-A375 Isogenic Cell Line
IDH1 Mutant-U-87 Isogenic Cell Line
IDH2 Mutant-TF-1 Isogenic Cell Line

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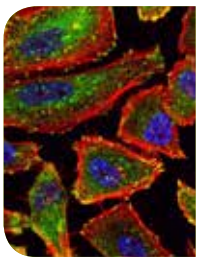

Traditional Cell Lines

HepG2

SH-SY5Y

Caco-2

Thousands more

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OAT1-HEK293T/17 (ATCC® CRL-11268G-1™) cells are a very useful *in vitro* tool for testing the regulation of OAT1 membrane transporter activity in kidney cells[1].

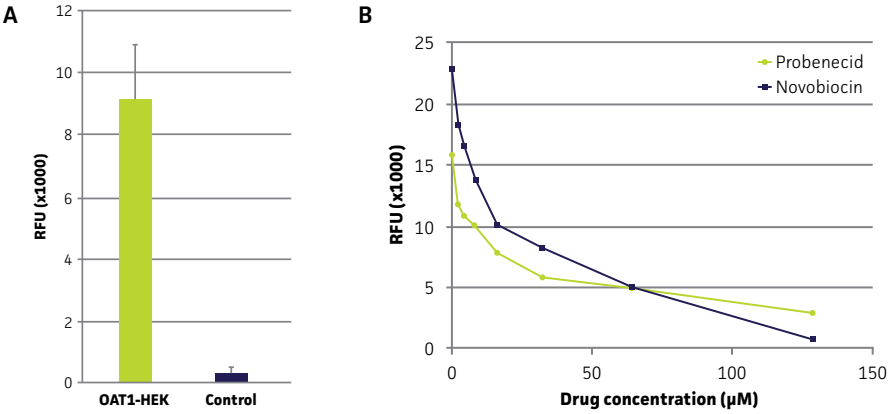
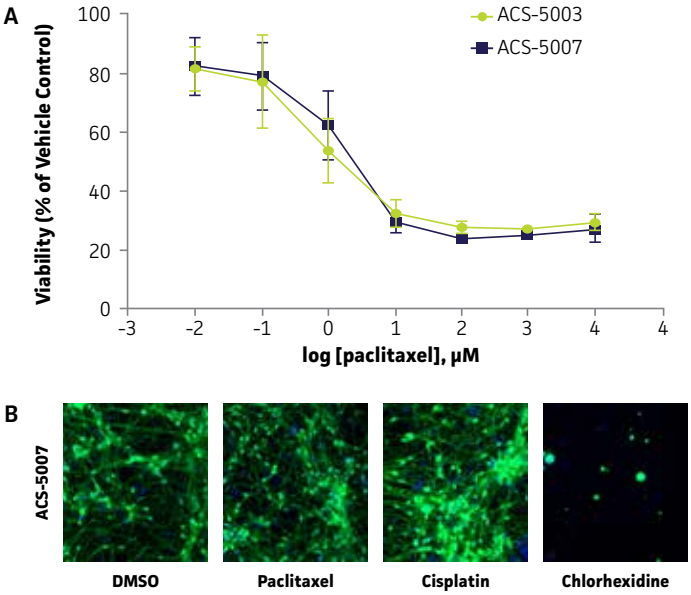


Figure 1. A) OAT1-HEK293T/17 cells express 20 fold more OAT1 than kidney lysates and were able to uptake more 5-CF than controls. B) This uptake was sensitive to two OAT1 inhibitors, probenecid and novobiocin.

Undifferentiated Neural Progenitor Cells (NPCs) and NPC-derived neurons provide an unlimited resource for *in vitro* disease modeling, toxicity screening, and drug screening. The figures below indicate three methods of monitoring neurotoxicity using normal NPCs (ATCC® ACS-5003™) and NPCs Derived from XCL-1 MAP2p-Nanoluc® Halotag® (ATCC® ACS-5007™)[2].



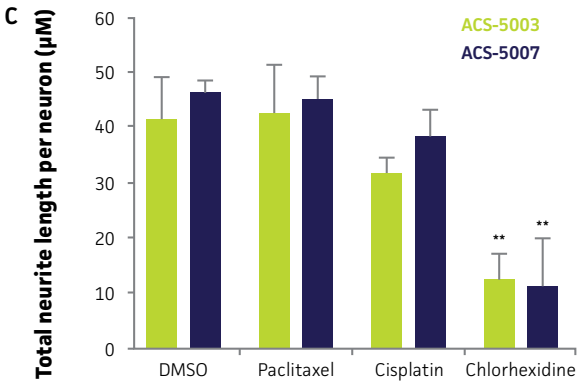


Figure 2. Effects of various compounds on undifferentiated NPCs or NPC-derived dopaminergic neurons. A) Undifferentiated NPCs were treated with paclitaxel for two days and cell survival was monitored by viability assay. NPCs differentiated into dopaminergic neurons were treated with paclitaxel, cisplatin, or chlorhexidine. Neurotoxic response to these compounds was detected via B) high-content imaging or C) total neurite length. Note the differential response: the NPCs-derived neurons were resistant to paclitaxel, while the undifferentiated NPCs exhibited sensitivity to the compound.

REFERENCES

1. Briley A, *et al*. Establishment and characterization of a kidney-drug interaction model by stably expressing hOAT1 in HEK 293T/17 cells. Application Note Number 24, 2016.
2. Panicker L, *et al*. Comprehensive gene expression analysis and neurotoxicity testing of human iPSC-derived neural progenitor cells and neurons. Application Note Number 23, 2016.

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