Corning® PureCoat™ Cultureware

Where life thrives on the surface

CORNING

Corning® PureCoat™ Surfaces

Optimized for Basic Research and Drug Discovery Applications

Advantages of Corning PureCoat Amine and Carboxyl Surfaces

- **Optimal Performance**
  Surface technology enhances attachment, proliferation, and recovery post-thaw for a variety of cells with poor attachment properties – mainly primary cells, transfected cells, and fastidious cell lines in serum-free or serum-reduced conditions.
- **Lot-to-Lot Consistency**
  Both surfaces are highly consistent from lot-to-lot. They are quality control tested using an appropriate cell line.
- **Delivering Choice**
  Surface chemistries are available on a variety of cultureware for preparative cell culture and drug discovery assays.

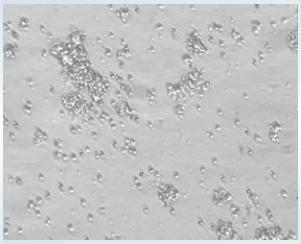
In preparative cell culture and applied research assays, Corning PureCoat amine and carboxyl surfaces are proven to provide improved attachment, increased proliferation, enhanced recovery from freeze-thaw, and improved differentiation for a broad range of cells that exhibit poor attachment properties in serum-free or serum-reduced conditions (e.g., primary cells, transfected cells, and fastidious cell lines). In drug discovery assays, when using transfected cells and commercially prepared division arrested cell lines, both surfaces maintain cell monolayers during vigorous liquid handling manipulation.

Cells cultured successfully on Corning PureCoat surfaces:

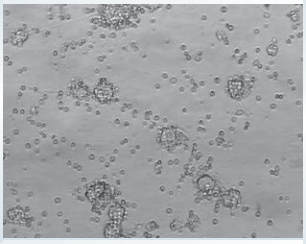
		AMINE (+)	CARBOXYL (–)
Primary Neuronal Cells	Rat Cerebellar Granule (RCG)	■	
	Rat Brain Cortex	■	
Primary Cells	Rat Astrocytes	■	
	Rat and Mouse* Cardiomyocytes		■
	Rat Epidermal Keratinocytes		■
	Rat Primary Pancreatic Islet*	■	
	Primary Cervical Epithelial Cells*	■	
	MSC (Rat bone marrow derived)*	■	
	Rat E14d Cortex Derived Neural Stem Cells*	■	
	Embryonic Mouse Brain Stem Cell*	■	
	Human Epidermal Keratinocytes (Neonatal)*	■	
	Human Placental Epithelial Cells*	■	
Transfected Cells	hERG-T-REx™ 293 Division Arrested Cells	■	
	EcoPack™ 2-293	■	■
	Living Colors™ HEK-ZsGreen Proteasome Sensor	■	■
	Flp-In™ T-REx™ 293*	■	
	HEK-293 Zellen*	■	
	293T*	■	
Cell Lines	PC12	■	■
	Baby Hamster Kidney (BHK-21)	■	
	HepG2	■	■
	HT-1080		■
	MRC-5		■
	LnCAP		■
	HEK-293	■	■
	CHO	■	
	N2A*	■	
	HeLa*		■

*Cells successfully cultured by customers on Corning PureCoat surfaces

A. TC-treated

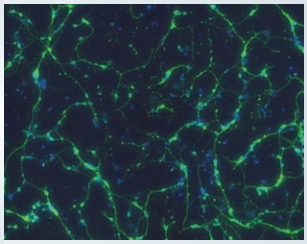


B. Corning CellBIND



C. Corning PureCoat Amine

D. Corning PureCoat Amine

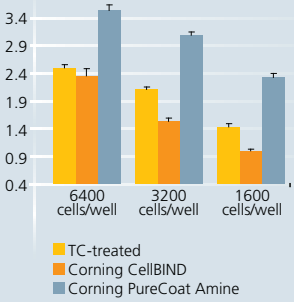


Increased cell attachment and differentiation of RCG cells on Corning® PureCoat™ amine

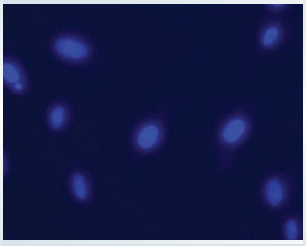
A-C. RCG cells were freshly isolated from rat brains and seeded onto 24 well TC-treated, Corning CellBIND® multiple well, or Corning PureCoat amine plates in medium containing 10% serum, glutamine, and potassium chloride. After 20-22 hours, cultures were observed under a microscope and images captured at 200X magnification. Results from a representative experiment show that RCG cells attach and differentiate on Corning PureCoat amine, whereas those on TC and Corning CellBIND multiple well plates are poorly attached and formed clumps.

D. Neurite outgrowth was observed from RCG cells plated on Corning PureCoat amine. In some instances, cultures were incubated for 48 hours, fixed, and immunostained with anti-tubulin IIIb. RCG cells grown on Corning PureCoat amine exhibit dendritic processes and express tubulin IIIb, a neuronal marker. RCG cells cultured on TC-treated and Corning CellBIND multiple well plates remained unattached and were washed off the plates during the fixation protocol (data not shown).

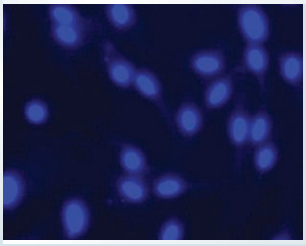
A. Relative Absorbance Units



B. TC-treated



Corning PureCoat Amine

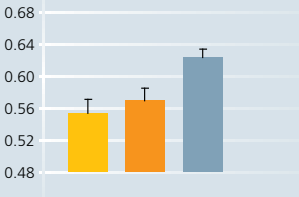


Enhanced cell growth of BHK-21 cells in reduced serum on Corning PureCoat amine

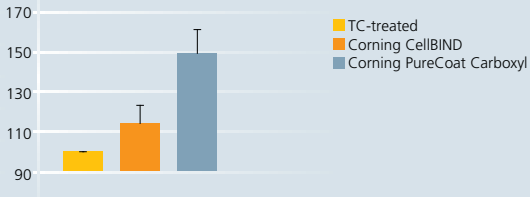
A. BHK-21 cells were seeded onto 96 well black/clear TC-treated, Corning CellBIND multiple well, or Corning PureCoat amine plates at densities between 1600-6400 cells/well and grown in culture medium containing 5% tryptose and 1% fetal bovine serum for 72 hours. MTS reagent (Promega) was added directly into culture wells (n=8 wells/condition) and incubated for 2 hours. Representative relative absorbance units (mean ± SEM) from one of three experiments is shown. Increased cell proliferation was observed on Corning PureCoat amine at all three seeding densities tested compared to TC-treated or Corning CellBIND multiple well plates.

B. Shown is a representative image of BHK-21 cells grown on 24 well TC-treated or Corning PureCoat amine plates and fixed with 4% paraformaldehyde. A nuclear stain, DAPI, was added to cultures and fluorescence images were captured at 200X magnification. An increase in DAPI staining was observed on Corning PureCoat amine indicating more cells attach and proliferate on the Corning PureCoat amine surface versus TC-treated.

A. Relative Absorbance Units



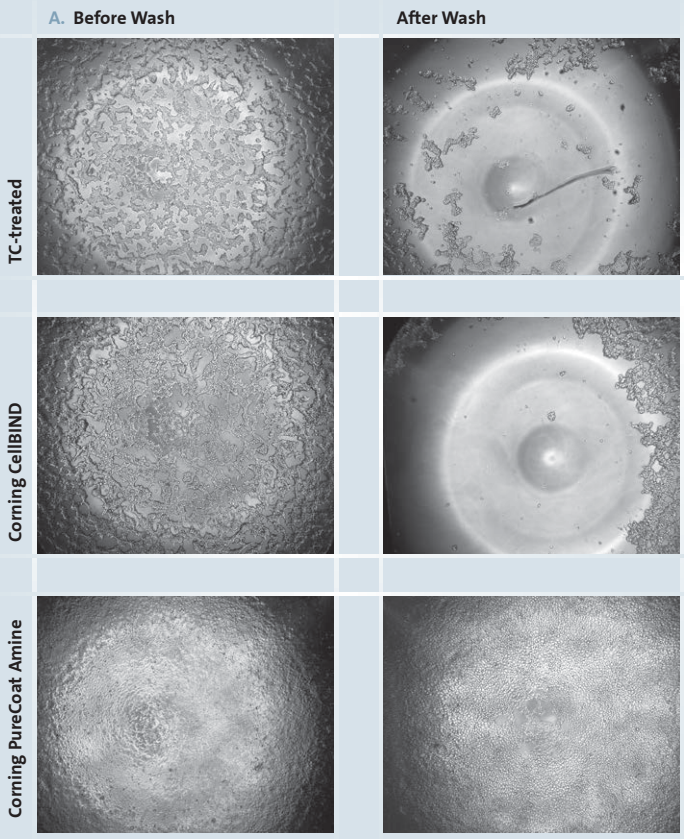
B. Percent Increase Over TC-treated

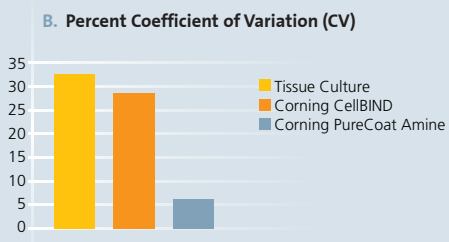


Enhanced cell proliferation of MRC-5 cells in growth media containing reduced serum on Corning PureCoat carboxyl

A. MRC-5 cells grown in MEM-medium containing 10% serum were trypsinized, washed with serum-free medium and seeded in medium containing 5% fetal bovine serum onto TC-treated, Corning CellBIND multiple well, or Corning PureCoat carboxyl plates at 5000 cells/cm^2 and cultured for 72 hours. To measure cell proliferation, MTS reagent (Promega) was directly added into culture medium and incubated for 2 hours. Relative absorbance units (mean ± SEM, n=16 wells/surface) of MRC-5 cells grown on Corning PureCoat carboxyl 24 well plates show an increase in cell proliferation in reduced serum versus TC-treated or Corning CellBIND multiple well plates.

B. A similar result was also observed on MRC-5 cells grown in 96 well format. Shown are mean increases ± SD (n=7-14 wells/surface) over TC-treated from two independent 96 well plate experiments.

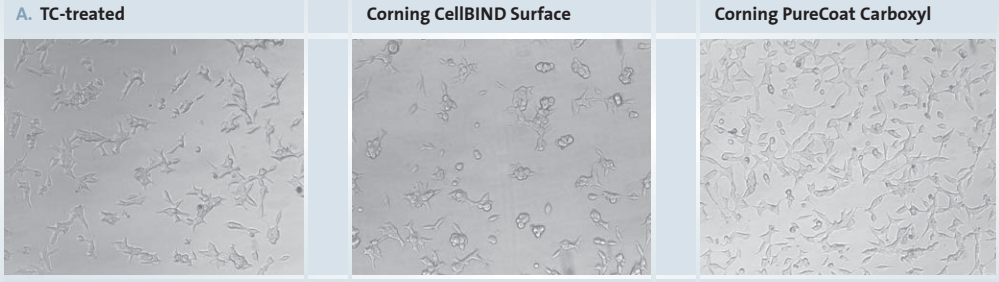


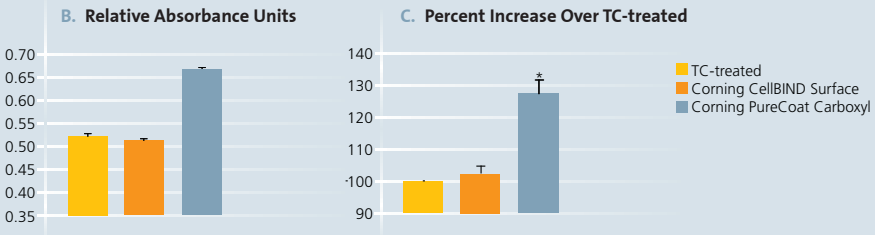


Improved post-wash adherence of EcoPack™2-293 cells (a transformed HEK-293 cell line) to Corning® PureCoat™ amine

A. Ten thousand cells were seeded onto TC-treated, Corning CellBIND® multiple well, or 384 well black/clear Corning PureCoat amine plates and grown under serum-free conditions for 20-24 hours. The cells were then washed (on an Embla cell washer) two times with Hank's buffered salt solution containing 10 mM Hepes, loaded with calcein AM for 1 hour and read on an EnVision® (PerkinElmer) plate reader. Before and after wash images indicate that cells remain attached on Corning PureCoat amine surface and are washed off the other surfaces that were tested.

B. Accordingly, relative fluorescent unit values are higher on Corning PureCoat amine (data not shown). Intraplate CV values (n=240 wells) are below 10% on Corning PureCoat amine offering superior consistency in cell-based assays, whereas CV values on TC-treated or Corning CellBIND multiple well plates are much greater.





Better freeze-thaw recovery of LnCAP, a prostate cancer cell line on Corning PureCoat carboxyl

A. Early passage LnCAP cells cryopreserved in growth medium (RPMI-1640, 10% fetal bovine serum) and 5% DMSO were thawed in a 37°C water bath and immediately seeded onto 96 well black/clear TC-treated, Corning CellBIND multiple well, or Corning PureCoat carboxyl plates at 16,000 cells/well. After an overnight incubation, cultures were observed and images captured at 100X magnification. Results from a representative experiment show that a greater number of LnCAP cells are evenly attached on Corning PureCoat carboxyl versus TC-treated or Corning CellBIND multiple well plates.

B. Exhausted media was gently removed, replaced with growth medium containing MTS reagent (Promega) and incubated at 37°C for 2 hours. Relative absorbance units (mean ± SEM, n=14 wells) are highest on Corning PureCoat carboxyl compared to those on TC-treated or Corning CellBIND multiple well plates.

C. This increase in cell attachment and proliferation was significantly greater ($p<0.05$) than other surfaces tested (N=3 experiments).

Meet the next generation of advanced cell culture surfaces – **Corning® PureCoat™** surfaces.

The first generation of Corning cell culture surfaces, Falcon®, brought untreated and tissue culture-treated surfaces. Next, Corning BioCoat™ brought a surface coating technology using Corning extracellular matrices and attachment factors. Corning proudly introduces the next generation of advanced cell culture surfaces — Corning PureCoat surfaces.

Corning PureCoat surfaces are a novel family of chemically-defined, animal-free cell culture surfaces designed to enhance cell performance. A proprietary thin-film coating technology produces a uniform, functionalized surface that provides a highly controlled environment for cell culture applications.

Both Corning PureCoat amine, a positively charged surface, and Corning PureCoat carboxyl, a negatively charged surface, are proven to provide improved cell attachment and cell proliferation over standard tissue culture (TC)-treated surfaces. These defined surfaces function with a broad range of primary and transfected cells in standard, serum-free, or serum-reduced culture conditions. Corning PureCoat surfaces support standard cell dissociation techniques, do not interfere with microscopy or imaging analysis, and do not require special steps for cell adaptation.

Defined Animal-Free Cell Culture Surfaces

Corning PureCoat amine and carboxyl surfaces are chemically-defined, animal-free enhanced cell culture surfaces. Both surfaces reduce variability, giving you more control over your cell culture environment and resulting in a more predictable biological outcome.

Improved Attachment and Increased Proliferation

Corning PureCoat surfaces provide improved attachment, increased proliferation, enhanced recovery from freeze-thaw, and improved differentiation for a broad range of cells that exhibit poor attachment properties. These features save you time while increasing productivity in the lab.

Ordering Information

Product Specifications

- Store at room temperature — no special storage or handling required
- Stable for at least 18 months from date of manufacture
- Quality control tested using an appropriate cell line
- Sterilized to SAL 10^{-6} by gamma irradiation
- Noncytotoxic and nonpyrogenic
- Cultureware material is polystyrene suitable for cell culture
- 96 and 384 well microplates meet ANSI/SBS standards (1-2004, 2-2004, 3-2004, 4-2004)
- 1536 well microplates meet ANSI/SBS standards (1-2004, 3-2004, 4-2004)

Custom Services

Bar coding, bulk packaging, and additional cultureware are available. Please contact your sales representative for more information.

Corning® PureCoat™ Amine Cultureware

DESCRIPTION	QTY./PACK	QTY./CASE	CAT. NO.
6 well plate	5	5	354721
	5	50	356721
24 well plate	5	5	354723
	5	50	356723
96 well black/clear plate	5	5	354717
	5	50	356717
384 well black/clear plate	5	5	354719
	5	50	356719
1536 well black/clear plate	5	5	354771
	5	50	356771
100 mm dish	10	10	354732
	10	40	356732

Corning PureCoat Carboxyl Cultureware

DESCRIPTION	QTY./PACK	QTY./CASE	CAT. NO.
6 well plate	5	5	354773
	5	50	356773
24 well plate	5	5	354775
	5	50	356775
100 mm dish	10	10	354784
	10	40	356784

For plate dimensions, automation compatibility guidance, and working volumes, please visit **www.corning.com/lifesciences.**

Warranty/Disclaimer: Unless otherwise specified, all products are for research use only. Not for use in humans. Not intended for use in diagnostic or therapeutic procedures. Corning Life Sciences makes no claims regarding the performance of these products for clinical or diagnostic applications.

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For technical assistance, contact Technical Support at:
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Corning acquired the BioCoat™, Falcon®, and PureCoat™ brands.