

# Corning® CellBIND® Surface

A surface treatment for improved cell attachment

CORNING

The Corning CellBIND surface enhances cell attachment under difficult conditions, such as reduced-serum or serum-free medium, resulting in higher cell yields.

Developed by Corning scientists, this technology uses a microwave plasma process for treating the culture surface. This process improves cell attachment by incorporating significantly more oxygen into the cell culture surface, rendering it more hydrophilic (wetable) and increasing surface stability.

## Benefits

- ▶ Better cell attachment leads to increased cell growth and yields
- ▶ More consistent and even cell attachment
- ▶ More quickly adapts cells to reduced-serum or serum-free conditions
- ▶ Reduces premature cell detachment from confluent cultures especially in roller bottles
- ▶ May eliminate the need for tedious, time-consuming, expensive and low stability biological coatings
- ▶ Requires no refrigeration or special handling and is stable at room temperature

## Same High Quality Standards as Other Corning Vessels

- ▶ Manufactured from optically clear polystyrene
- ▶ Rigorous QC testing for consistency and reproducibility
- ▶ Printed serial number labels are placed on the product for quality assurance and tracking
- ▶ A CellBIND logo label is placed on the product to differentiate from standard treatment cell culture products and to avoid mix-ups
- ▶ Sterile
- ▶ Nonpyrogenic

## Cell Dissociation Recommendations

Culture inoculating and harvesting should be performed in the same manner as methods currently being employed. Both enzymatic and nonenzymatic dissociating solutions have been successfully used to remove cells from CellBIND surfaces, including Trypsin-EDTA, Accutase®, Versene®, Dispase, and Citric Saline. Some dissociating agents, such as Dispase or Versene, should be removed by centrifugation prior to plating the cells.

## Cell Lines Having Success with Corning CellBIND Surface

- |             |                                    |                          |
|-------------|------------------------------------|--------------------------|
| • CHSE-214  | • LNCaP                            | • C8B4                   |
| • PC-12     | • 3T3                              | • Vero                   |
| • HEK-293   | • Caco-2                           | • BHK                    |
| • CHO       | • Hep-G2                           | • PER C6                 |
| • HTB-13    | • U-2 OS                           | • NSC-34                 |
| • Calu-3    | • 16HBE                            | • Transfected cell lines |
| • Saos-2    | • DLD1                             | • Endothelial cells      |
| • MBDK      | • Primary prostate                 | • Cardiomyocytes         |
| • E4 embryo | • Melanoma                         |                          |
| • 2/4/A1    | • Preadiposites                    |                          |
| • A549      | • Primary rat liver                |                          |
| • HUVEC     | • Primary mouse embryo fibroblasts |                          |
|             | • Hi-5 (BTI-Tn-5B1-4)              |                          |
|             | • HCT-116                          |                          |

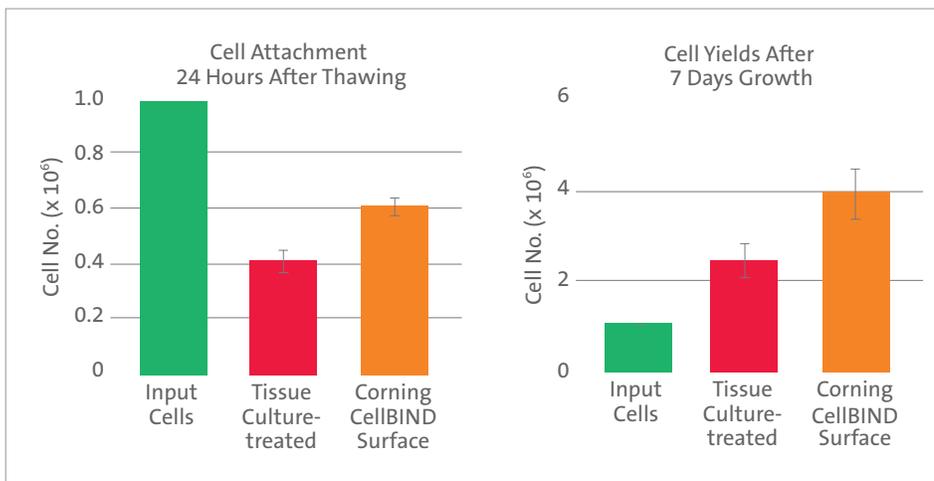
The following application notes are available at [www.corning.com/lifesciences](http://www.corning.com/lifesciences). These documents individually and collectively support the benefits of using the CellBIND surface.

- ▶ Corning CellBIND Surface: An Improved Surface for Enhanced Cell Attachment (CLS-AN-057)
- ▶ Enhanced Attachment of LNCaP Cells to the Corning CellBIND Surface (CLS-AN-048)
- ▶ The Synergistic Effect of HEK 293 Cells Grown in Serum-free Medium with the Corning CellBIND Surface (CLS-AN-049)
- ▶ Enhanced Survival of LNCaP Cells Following Cryopreservation Using the CryoStor™ CS5 Preservation Solution and Corning CellBIND Surface (CLS-AN-084)

We have provided some useful information from each of these CellBIND surface documents for your convenience.

## Corning CellBIND Surface: An Improved Surface for Enhanced Cell Attachment (CLS-AN-057)

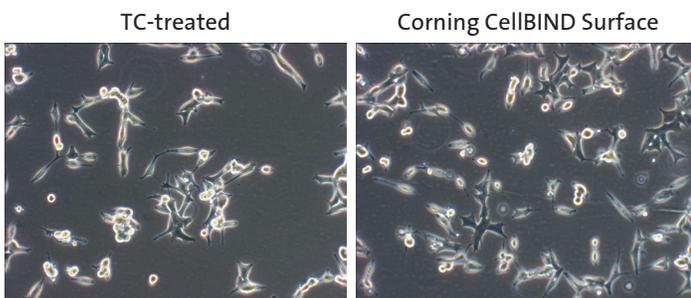
- ▶ Can eliminate the need for biological coatings for cell attachment
- ▶ Enables growth and protein production in low serum
- ▶ Increases adherence and cell yields of fastidious cell lines
- ▶ Enables better cell recovery of primary cell isolates
- ▶ Enables rigorous handling/automation
- ▶ Does not require special storage or handling
- ▶ Requires minimal revalidation by the FDA



Total cell yield at 24- and 168-hour incubation post-thaw under standard conditions. Seeding density  $1.0 \times 10^6$  cells/flask. 24-hour data represents average count + SE from three independent experiments.

## Enhanced Attachment of LNCaP Cells to the Corning CellBIND Surface (CLS-AN-048)

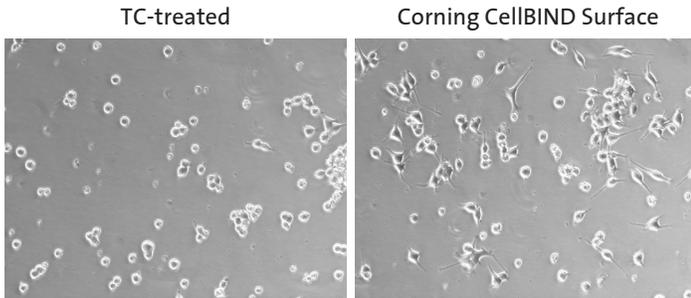
- ▶ On average, 49% more LNCaP cells attached to the CellBIND surface after 24 hours of culture as compared to a standard Tissue Culture (TC)-treated surface.
- ▶ Plating of LNCaP cells on the CellBIND surface results, on average, in 64% greater cell recovery at 7 days as compared to a standard TC-treated surface.
- ▶ The Corning CellBIND surface improves the adherent qualities of LNCaP cells, with cells exhibiting a more “spread out” morphology and better uniform distribution than a standard TC-treated surface.



Attachment of LNCaP cells. Cells were thawed and plated onto TC-treated (left) T-25 flasks and Corning CellBIND surface (right). 24 hours post-seeding a random field was viewed by light microscopy (100X magnification).

## The Synergistic Effect of HEK-293 Cells Grown in Serum-free Medium with the Corning® CellBIND® Surface (CLS-AN-049)

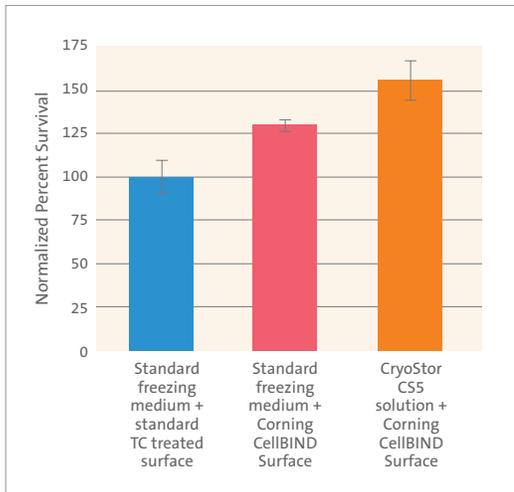
- Under these serum-free conditions, HEK-293 cells maintain a more normal/flattened adherent morphology on the CellBIND surface vs. a standard TC-treated surface.
- The improved adherence of HEK-293 cells on the CellBIND surface results in 69% more cells at 96 hours as compared to cells grown on standard TC-treated surfaces.
- The CellBIND surface yields a greater number of total cells (adherent and nonadherent) during the time course of the study.



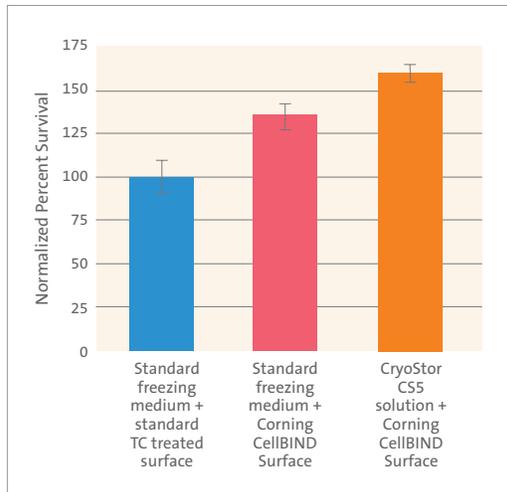
Representative field of HEK-293 cells grown under serum-free conditions on standard TC-treated (left) and Corning CellBIND surface (right) at 24 hours. Light micrograph (100X magnification).

## Enhanced Survival of LNCaP Cells Following Cryopreservation Using the CryoStor™ CS5 Preservation Solution and Corning CellBIND Surface (CLS-AN-084)

- Combining the CellBIND surface with the BioLife Solutions CryoStor CS5 freezing solution resulted in significant increases in LNCaP cell survival following cryopreservation.
- CryoStor CS5 freezing solution combined with the CellBIND surface eliminated the need for proteins or sera in the cryopreservative process, reducing both the costs and the risks associated with using animal-derived sera and proteins.



Survival and attachment of cryopreserved LNCaP cells in T-25 flasks 24 hours post-thaw. Survival was determined using direct cell counts (hemacytometers) with results normalized to cultures grown under standard conditions (blue column). Data is an average  $\pm$  SD of 3 independent experiments performed by Corning scientists (N = 3 repetitions per group).



Survival and attachment of cryopreserved LNCaP cells in 96-well microplates 24 hours post-thaw. Survival was determined using an almarBlue™ assay and results normalized to cultures grown under standard conditions (blue column). Data is an average  $\pm$  SD of 3 independent experiments performed by BioLife Solutions scientists (N = 3 repetitions per group).

## Ordering Information

Products may not be available in all markets.

Cat. No.	Description	Qty/ Pk	Qty/ Cs
<b>Roller Bottles</b>			
3907	850 cm <sup>2</sup> Roller bottle, CellBIND surface, easy grip cap, sterile	2	40
431329	850 cm <sup>2</sup> Roller bottle, CellBIND surface, easy grip vent cap, sterile	2	40
431134	1700 cm <sup>2</sup> Roller bottle, expanded surface, CellBIND surface, easy grip cap, sterile	20	20

<b>Flasks</b>			
3289	25 cm <sup>2</sup> Flask, CellBIND surface, vent cap, sterile	20	200
3290	75 cm <sup>2</sup> Flask, CellBIND surface, vent cap, sterile	5	100
3291	150 cm <sup>2</sup> Flask, CellBIND surface, vent cap, sterile	5	50
3292	175 cm <sup>2</sup> Flask, CellBIND surface, vent cap, sterile	5	50
3292A	175 cm <sup>2</sup> Flask, CellBIND surface, phenolic style cap, sterile	5	50
431328	175 cm <sup>2</sup> Flask, CellBIND surface, CellBIND surface, vent cap, with bar code, sterile	7	84
3293	225 cm <sup>2</sup> Flask, CellBIND surface, vent cap, sterile	5	25
10030	1,720 cm <sup>2</sup> HYPERFlask® M cell culture vessel, CellBIND surface, with bar code, sterile	1	4
10020	1,720 cm <sup>2</sup> HYPERFlask M cell culture vessel, CellBIND surface, with bar code, sterile	4	4
10034	1,720 cm <sup>2</sup> HYPERFlask M cell culture vessel, CellBIND surface, with bar code, sterile	4	24
10024	1,720 cm <sup>2</sup> HYPERFlask cell culture vessel, CellBIND surface, with bar code, sterile	4	24

### Corning CellSTACK® Culture Chambers

3330	636 cm <sup>2</sup> CellSTACK chamber, 1-Stack, CellBIND surface, sterile	1	8
3310	1,272 cm <sup>2</sup> CellSTACK chamber, 2-Stack, CellBIND surface, sterile	1	5
3311	3,280 cm <sup>2</sup> CellSTACK chamber, 5-Stack, CellBIND surface, sterile	1	2
3312	6,360 cm <sup>2</sup> CellSTACK chamber, 10-Stack, CellBIND surface, sterile	1	2
3320	6,360 cm <sup>2</sup> CellSTACK chamber, 10-Stack, CellBIND surface, sterile	1	6
3321	25,440 cm <sup>2</sup> CellSTACK chamber, 40-Stack, CellBIND surface, sterile	1	2

**Warranty/Disclaimer:** Unless otherwise specified, all products are for research use or general laboratory use only.\* Not intended for use in diagnostic or therapeutic procedures. Not for use in humans. These products are not intended to mitigate the presence of microorganisms on surfaces or in the environment, where such organisms can be deleterious to humans or the environment. Corning Life Sciences makes no claims regarding the performance of these products for clinical or diagnostic applications. \*For a listing of US medical devices, regulatory classifications or specific information on claims, visit [www.corning.com/resources](http://www.corning.com/resources).

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For additional product or technical information, visit [www.corning.com/lifesciences](http://www.corning.com/lifesciences) or call 800.492.1110. Outside the United States, call +1.978.442.2200.

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Cat. No.	Description	Qty/ Pk	Qty/ Cs
<b>Multiwell Plates</b>			
3335	6-well plate clear, CellBIND surface	5	50
3336	12-well plate, clear, CellBIND surface, standard	5	50
3337	24-well plate, clear, CellBIND surface, standard	5	50
3338	48-well plate, clear, CellBIND surface, standard	5	50

### Microplates

3300	96-well clear flat bottom, CellBIND surface, with lid, sterile	5	50
3340	96-well black/clear flat bottom, CellBIND surface, with lid, sterile	5	50
3809	96-well white/clear flat bottom, CellBIND surface, with lid, sterile	20	100
3770	384-well black/clear flat bottom, CellBIND surface, low flange, with lid, sterile	20	100

### Microcarriers

3779	Corning Enhanced attachment microcarriers, 10g vial		1
4620	Corning CellBIND surface microcarriers, 100g bottle		1
4621	Corning CellBIND surface microcarriers, 500g bottle		1