

# ISurTherm™ Thermo-Responsive Surfaces

Innovative Surface Technologies, Inc. (ISurTec®)

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## Description

An ISurTherm™ polymer surface consists of covalently immobilized thermo-responsive polymer using a proprietary crosslinker on various cell culture substrates to create surfaces responsive to a stimulus such as temperature. The use of these surfaces replaces the use of trypsin for collecting cells since detachment is achieved merely by lowering the culture temperature to ambient room temperature. This eliminates the need for trypsin; hence saving on washing, labor, and time.

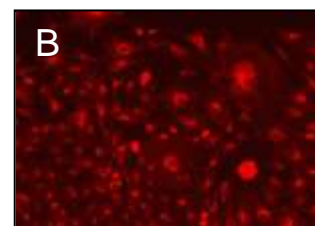
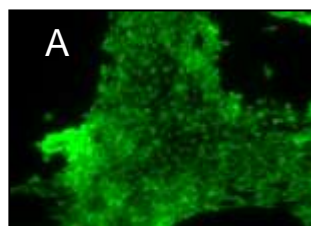
## Features

The thermo-responsive polymer and crosslinker reagent has been formulated for cell culture applications where the substrate is a standard tissue culture vessel of different configurations such as dishes, multiwell plates, flasks or microcarriers. ISurTec's® preformed cytocompatible polymer is a distinct advantage in tissue culture where trypsin is not preferred.

Cell culture performs well on nanofibrillar surfaces where the nanofibers are coated with, or manufactured from, the thermo-responsive polymer and crosslinker reagent.

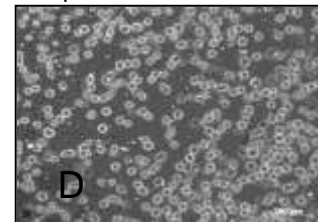
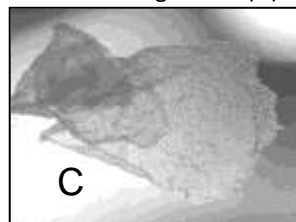
## Applications

The ISurTherm™ reagent is ideally suited for the collection of viable cells with intact cell surface proteins and gap junctions without the use of digestive enzymes like trypsin or other harsh treatment.



Live/dead cytotoxicity assay (A) shows the coating is non toxic to the cells. B) Staining for Connexin -43 (CX-43, a gap junction marker) on detached cell sheet shows that most of the cells are CX-43 immunoreactive.

Photograph (C) of cell sheet detached from coated surface. Release of single cells (D) upon temperature reduction from a



coated surface.

Cells may be released from the substrate either as cell sheets, cell clusters, or single cells.

A faster, non-invasive recovery of fragile cell types such as stem cells, dendritic cells, and cell sheets could have considerable value for applications in tissue engineering, cell-based therapies, extracellular matrix studies, and cell/tissue function and pathology.

For additional information on how an ISurTherm™ reagent coating may help you overcome a tissue culture problem, please contact an ISurTec® representative.

All described properties are typical characteristics and are not specifications. All suggestions are offered in good faith but without guarantee or warranty as to the conditions and methods of use that are beyond our control. The prospective user must evaluate the appropriateness of our materials prior to adopting them on a commercial scale. The suggested use of ISurTec's® products is not a recommendation to use in violation of ISurTec's® intellectual property position.

**ISurTec®**

### Mission & Team

Surface modification of devices & biomolecules  
in health care, bioanalytical, & high value industrial products.  
Research, development and business team of scientists - 6 Ph.D., 3 M.S., 4 B.S.  
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