

Biotek β -TCP Disc

Features and Benefits of β -TCP disc



An ideal reference biomaterial for bone and other tissue engineering research. This β -tricalcium phosphate (β -TCP) is a commonly used totally absorbable bioceramic for bone tissue engineering. β -TCP disc is cell culture tested and terminally sterilized by γ -radiation.

Ideal Reference Biomaterial for Bone Tissue Engineering Research

β -TCP has been extensively studied as bone repair and bone tissue engineering scaffold material. It has excellent biocompatibility and osteo-conductivity. Therefore, these β -TCP discs can serve as an ideal reference surface for your bone and other tissue engineering studies.

Pre-sterilized and Ready to Use

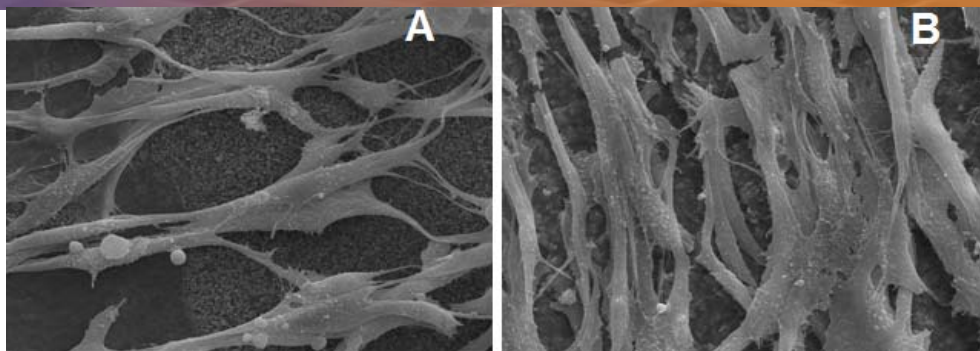
β -TCP discs are individually packaged and terminally sterilized using γ -radiation. They are ready to use!

Bioabsorbable and Non-Cytotoxic

β -TCP discs are made from 100% synthetic tri-calcium phosphate. β -TCP has been extensively studied and used as bioabsorbable biomaterial. β -TCP has excellent biocompatibility and is non-cytotoxic.

Consistent Quality

β -TCP discs are made from 100% synthetic β -TCP with consistent quality to ensure experimental reproducibility when using different batches of β -TCP discs.



Scanning Electron Microscopic (SEM) images showing that osteoblasts cultured on β -TCP discs at day 3 (A) and day 7 (B).

For Ordering: <http://www.3dbiotekstore.com>; Tel: (732)729-6270; Fax: (732)745-7270

Address: 675 US Highway 1, North Brunswick, NJ 08902, USA

Cell Seeding on Beta Tri-Calcium Phosphate (β -TCP) Disks

Materials and Equipment

Cell line of choice
TCP disk of specified diameter
Cell culture media
Pipettes

Procedure

1. Calculate the appropriate cell suspension concentration for cell seeding. For adhesion experiments with Osteoblast, we suggest 2,000-cells/cm². For proliferation experiments, we suggest 1,000-cells/cm² and time points at 1, 3, 5, and 7 days in culture.

Table I: Surface Area for Cell Seeding and Seeding Volumes on β -TCP Disks Formats

β -TCP Disk Size	Growth Area	Seeding Volume	Volume after 3 Hours	Total Volume
96-well	0.196 cm ²	30 ul	170 ul	200 ul
48-well	0.708 cm ²	100 ul	150 ul	250 ul

2. Once cells have been trypsinized, resuspend cells for specified concentration and seeding volumes (e.g. 30-ul for 96-well β -TCP, 100-ul for 48-well β -TCP).
3. Slowly pipette the correct seeding volume cell suspension onto the center, top surface of each β -TCP disk. **Note: Do not allow the cell suspension to contact the sides of the wells. This will result in reduced seeding efficiency.**
4. Gently place plates into incubator. Avoid agitating the plates!
5. After 3 h, remove the plates containing the β -TCP disk from the incubator. Add the appropriate volume (see chart above) of fresh medium into each well in a sterile biosafety hood. Make sure that the scaffolds are completely immersed and sitting at the bottom of the wells. Return the plate to the incubator.
6. To change media regularly, aspirate carefully without touching the disks. Add fresh medium into each well from the side. Continue with normal cell culture until analysis.

For further support, please visit us at <http://www.3DBiotek.com>

This file can be downloaded via this link: www.3dbiotek.com/Documents/CellSeedingProtocol_TCPDisk.pdf

TECHNICAL DATA SHEET

β -TCP Discs

β -TCP discs offered by 3D Biotek are sintered with high crystallinity and purity as shown by XRD and FTIR spectra below (Figures 1 and 2, respectively).

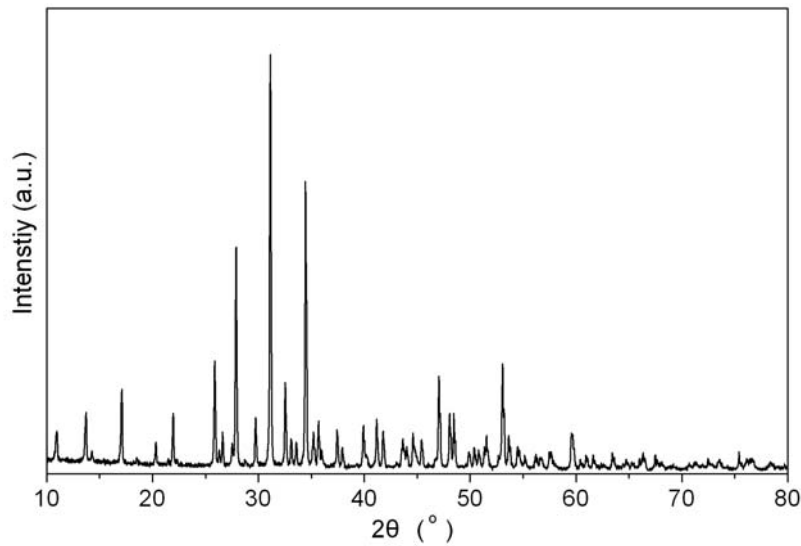


Figure 1. X-ray diffraction spectrum of β -TCP disc after sintering.

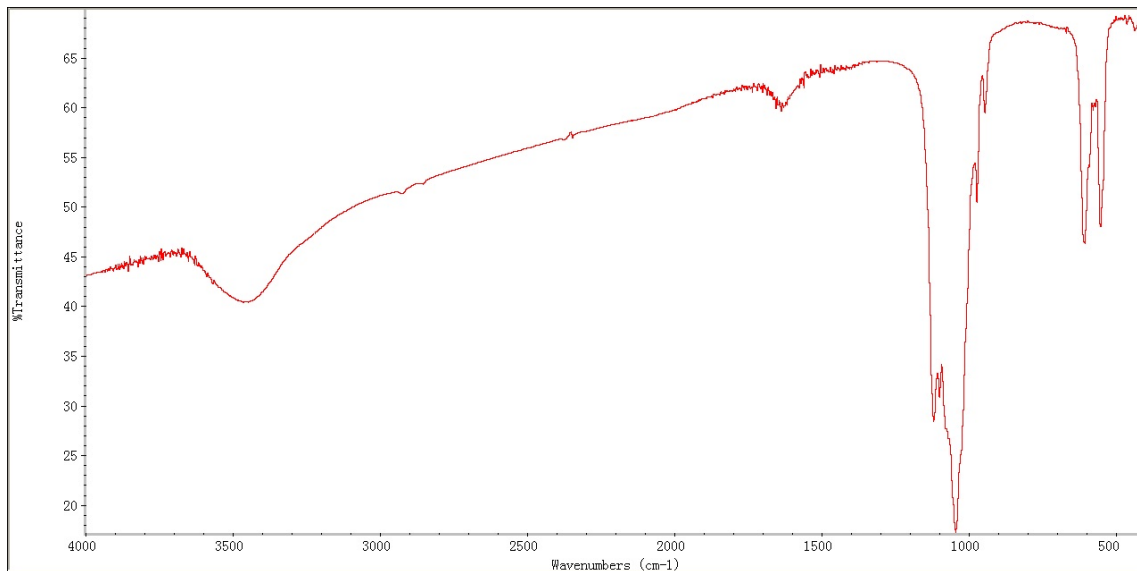


Figure 2. FTIR spectrum of β -TCP disc

These β -TCP discs are non-cytotoxic as indicated by culturing of osteoblasts on their surfaces (Figure 3).

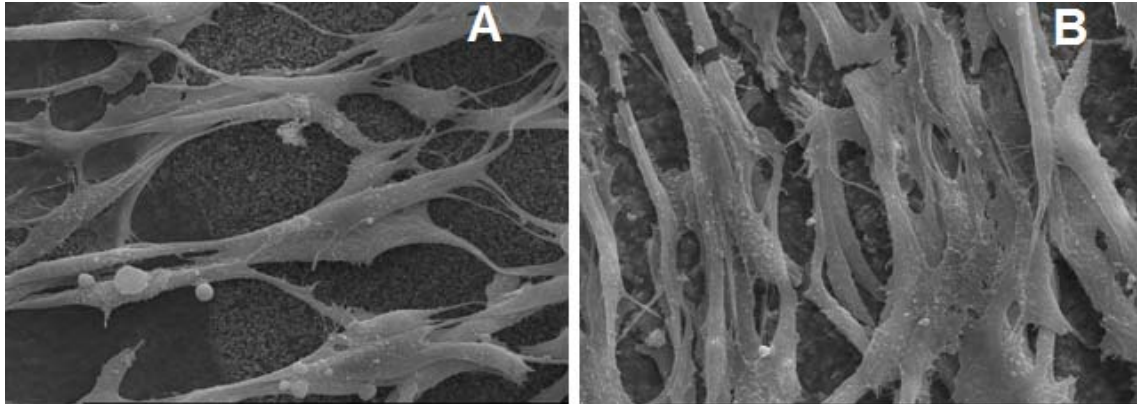


Figure 3. Scanning Electron Microscopic (SEM) images showing that osteoblasts cultured on β -TCP discs at day 3 (A) and day 7 (B) .

Warning: These β -TCP discs are offered for research purposes only. They are not offered for use in or on humans as a device or drug.

Ordering Information

β -TCP discs are individually packaged and terminally sterilized by γ -ray radiation. They are available in multiple sizes for fitting into wells of various tissue culture plates.

When ordering, please choose the right disc diameter that meets your research need.

For ordering, please visit our website at
<http://www.3dbiotekstore.com>

Or call 732-729-6270