

## Tissue engineering approach to cell delivery

**Deepa Ghosh**

Reliance Life Sciences, India

Cell transplantation may be one of the most promising approaches for tissue repair or regeneration. However, the problems facing its success include its delivery and survival, limited cell integration and incomplete cell differentiation. Recent studies have shown that use of tissue engineering approach can address these hurdles. Combining cells with biomaterial scaffolds thus provides a promising strategy for cellular delivery. The aim is to encourage tissue repair by delivering cells to the damaged tissues in an ideal configuration.

Tissue engineering facilitates tissue repair by using a combination of cells, growth-stimulating factors and scaffolding material. This approach improves the outcome by ensuring efficient cell delivery at the site of action and provides ideal conditions for proliferation and differentiation. The concept of using a scaffold in tissue engineering is to mimic the functions of native ECM, at least partially. While the material of choice for a scaffold preparation should meet the general requirement of biocompatibility, the scaffold structure would depend on the tissue that is intended to repair. The structure of the scaffold either in the form of membranes, porous structures, fibers etc would be based on the architecture of the damaged tissue, the need for efficient nutrient and metabolite transport and its mechanical stability.

Reliance Life Sciences (RLS) is involved in the development of several regenerative medicine based therapies using autologous and allogeneic stem cells and somatic cells from bench to bed-side. Using tissue engineering principles we have developed therapies to repair/regenerate cartilage, muscle, skin, eye etc. The presentation would focus on our approach to deliver appropriate cells to these tissues.

## Biography

Deepa Ghosh heads the Tissue Engineering group, Regenerative medicine at Reliance Life Sciences. She has completed her Ph.D. research work at USUHS, MD and BITS India and post-doctoral research at Emory University, GA. During the past 12 years she has developed several cell therapies and wound management products.

[deepa\\_ghosh@relbio.com](mailto:deepa_ghosh@relbio.com)