

Lung Regeneration: One Step Closer

TGRI scientists Drs. Mingyao Liu, Thomas Waddell and Shaf Keshavjee have determined a new avenue of research in lung regeneration. Using cell-based tissue engineering, this approach can potentially recreate alveolar-like structures – the site of gas exchange in the lungs.

Sponges of Gelfoam—a soft pliable surgical material—were incubated with animal fetal lung cells and implanted. Researchers used this type of cell because it has a great capacity for growth. Study findings show that the Gelfoam sponges were similar shape and pore size to natural structures. As animal lung tissue formed, the sponge degraded in a non-toxic and non-inflammatory manner. In addition, the Gelfoam sponges acted as an excellent supporting material for adult lung cells.

“Our future goal is to use this technique to deliver stem cells,” says Dr. Liu. “These findings have highlighted several important criteria and areas for investigation that will hopefully make lung regeneration a reality.”

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