Rapid Concentration of Multilayered Tissues on Curved Substrate by Water Transfer Printing

**1. Background**

Rapid Assembly
High Cell Concentration
Multiple Tubular Structure

**2. Design Concepts**

**What's a Water Transfer Printing?**

2. Pelt transferred tissues on the surface of water
3. Lift up the transferred body to the air
4. Coat tissues with biodegradable material, and culture medium after fixing
5. Break down alginate gel using alginate lyase

**3. Developed Figures**

Transferred tissue
Transcriptional body
High circularity of transferred tissue demonstrated excellent transcriptional behavior.

**4. Results and Discussion**

Pulling speed: 25 mm/sec
Stained with DAPI and Alexa488

Low concentration alginate lyase have little effect on the cell migration

**5. Conclusion**

1. We proposed new 3D assembly techniques to fabricate a hollow tissue structure using by water transfer printing.
2. We succeeded in assembling three-dimensional multilayered tissue into tubular structure.
3. Fabricated tubular multilayered tissues used circulation model, such as artificial blood vessel.
4. These artificial hollow tissues would be used for drug efficiency evaluation and operative training as in vitro simulators.