

## Service Description

The rabbit abdominal sidewall adhesion model is a reproducible and effective model to study adhesion formation and evaluate materials to prevent adhesions. Moreover, the model is flexible, e.g., laparoscopic procedures can be employed and various methods can be used to induce adhesions.

## Methodology

**Pre-operative Procedure:** Rabbits are anesthetized; an IV catheter is placed in a marginal ear vein; and the rabbits' abdomens are shaved. In the operating room, an endotracheal tube is placed.

**Surgery:** A midline laparotomy is made; the cecum and bowel are excised. The surface of the cecum adjacent to the sidewall defect is abraded with sterile gauze until petechial hemorrhage is observed. The surface of the cecum facing the rest of the bowel is also abraded. A 3 X 3 cm square of the peritoneum and the abdominal transverse muscle is removed from the right lateral abdominal wall. After the completion of adhesion induction, the bowel is replaced into the abdominal cavity, and the muscle wall and skin closed with sutures and/or surgical glue.

**Post-operative Procedure:** Animals are observed until stage IV recovery from anesthesia is reached. Following recovery from anesthesia, long-term post-operative care is performed twice daily for at least 10 days following surgery. Subsequently, daily observations are performed to check the general health status of the animals for the remainder of the study.

**Euthanasia and Necropsy:** On day 32, animals are euthanized; the abdomens excised; and adhesions evaluated for tensiometry and/or histopathology.

## Options

**Animal:** New Zealand White Rabbits, rats, or client specified

**Adhesion Induction:** Abrasion of the cecum or client specified

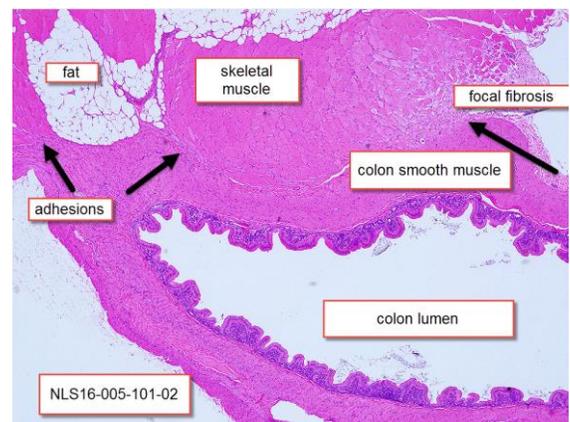
**Control:** Sham surgery (no abrasion) or client specified

**Length/Endpoint:** 32 days or per protocol or client specified

**Measurements:** Body weight, tensiometry, histopathology, or client specified

## Applications

- Determine the efficacy of new materials to prevent post-operative adhesions
- Compare the efficacy of products approved for the prevention of adhesions with new materials
- Study surgical methods to prevent adhesion formation or identify factors involved in adhesion formation



Above: Histopathology sections showing adhesion of skeletal muscle to colon muscle wall and focal fibrosis

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