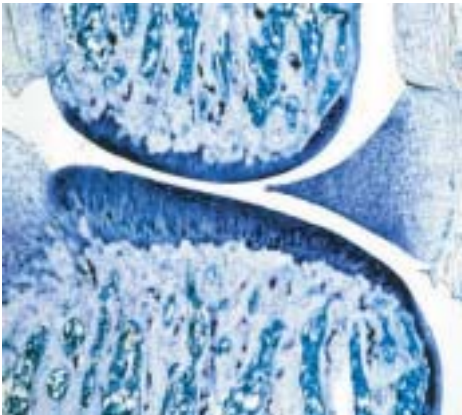
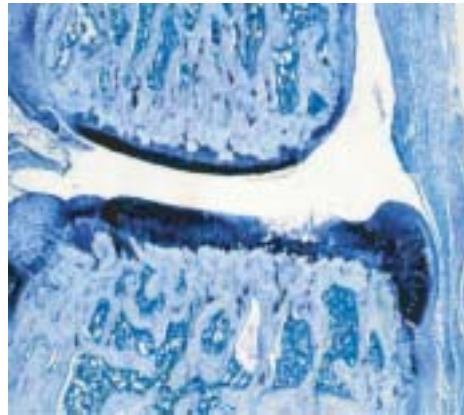


## Surgically-Induced Osteoarthritis in Rat General Guidelines for Histopathology

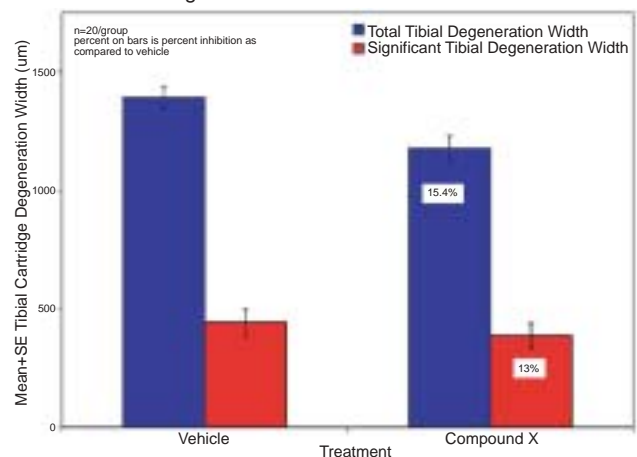
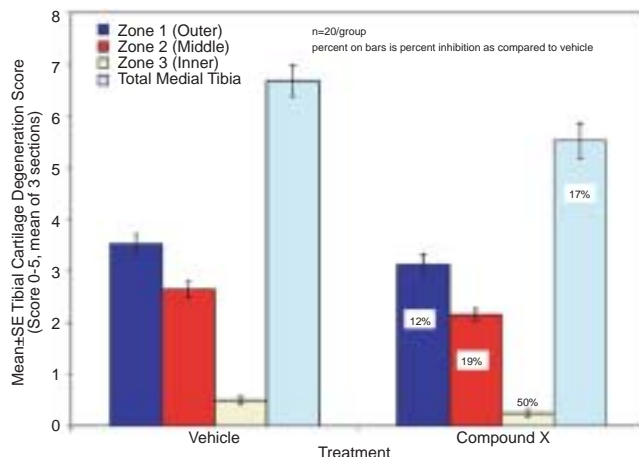
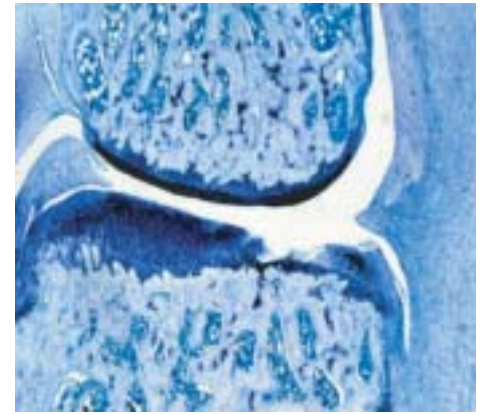
- Primary Endpoints:** Histology on operated (medial meniscal tear) knee joint
- Tissues Collected:** Operated knee joint
- Fixation:** 10% Neutral Buffered Formalin
- Processing:** After adequate fixation (48 hours) the knees are placed into 5% formic acid to decalcify. The knees are cut in the frontal plane, both halves are processed and embedded in paraffin.
- Stains Used:** Three – 8 micron step sections (at 150-200  $\mu\text{m}$ ) are stained with Toluidine Blue. Other stains such as Safranin O/Fast green or Hematoxylin and Eosin may also be used.
- Quality Control:** Knees must demonstrate the medial portion to include complete sections of both the femur and tibia and osteophytes if present.
- Scoring Criteria:** Knee sections can be scored using a wide variety of parameters, such as tibia cartilage degeneration score, tibial degeneration width, medial osteophyte score and medial femur cartilage degeneration score.



Normal rat knee – Toluidine Blue



Knees from rats which had unilateral medial meniscal tear surgery 3 weeks previously. Focal cartilage degeneration with proteoglycan and chondrocyte loss is present. Note the large osteophyte in the image on the left.



Graphical representation of the histological parameters of tibial cartilage degeneration and tibial cartilage degeneration width