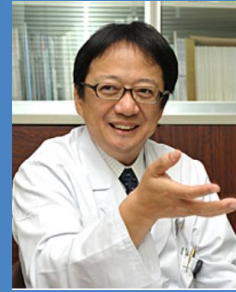




DEPARTMENT OF ORTHOPAEDIC SURGERY

We have performed a variety of innovative surgeries for patients with musculoskeletal disorders. Recent innovation based on molecular diagnostics and therapeutics have improved the clinical outcomes. If you are interested in our clinical research and further trials of basic research, join us and meet your big future!



Prof. Toshifumi Ozaki

Our research interests:

Musculoskeletal Oncology

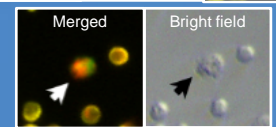
Clinical Research

1. Hip transposition after resection of periacetabular tumors
2. Limb reconstruction with autologous bone graft
3. Functional reconstruction with polypropylene mesh

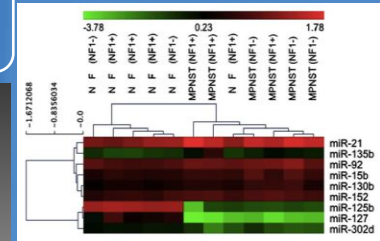


Basic Research

1. microRNA profiling and functional analysis for bone and soft tissue sarcomas
2. Circulating microRNA as a novel diagnostic tool for bone and soft tissue sarcomas
3. Detection of circulating tumor cells in patients with bone and soft tissue tumors
4. Functional analysis and clinical application of sarcoma-derived exosomes



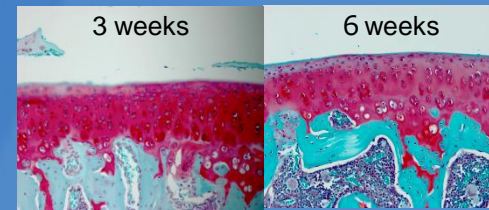
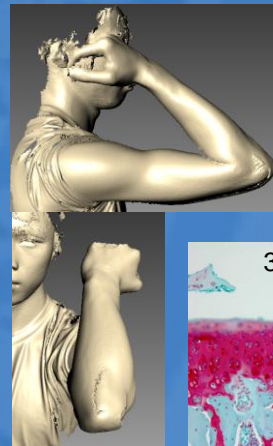
Detection of circulating tumor cells



microRNA profiling and functional analysis

RA, Hand, and Foot

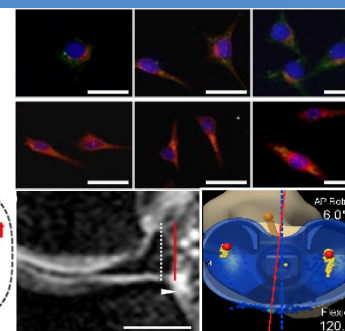
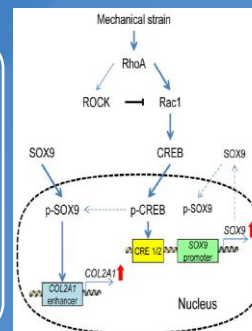
1. Functional analysis of lymphotoxin α in human cartilage.
2. Mechanical stress-induced expression of RANKL and OPG by human chondrocytes.
3. Range of motion analysis with a non-contact three-dimensional measurement device.
4. The relationship between factors (mechanical stress, histone deacetylase inhibitors, and micro RNA) and osteoarthritis.
5. Chemical screening to promote the tendon specific transcription factor to realize the regeneration of tendon and ligament tissues.
6. Effect of adipose extract on IL-1 β -induced expression of protease by human chondrocytes.



OA model rat

Knee and Hip Joint

1. Histological and anatomic analyses of the ACL and meniscus.
2. Meniscal repair/healing/regeneration involved in transtibial pullout repair, neovascularization, and meniscus cell-based treatment.
3. Transcriptional regulation of chondrocytic genes in cartilage, meniscus, and ligament.
4. Development of navigation system for joint arthroplasty.



Spine

1. Biomechanical research of spinal implant (plate, rod, screw).
2. 3D topography in patients with scoliosis to clarify the relationship between deformation of the body surface and deformity of the spinal column.

