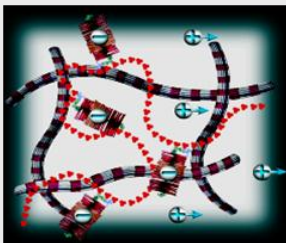


Healthy Cartilage



Normal Streaming Potentials

During compression of normal cartilage, the flow of interstitial fluid displaces positively charged mobile ions relative to negatively charged proteoglycans entrapped within the collagen network. This generates electric potentials called streaming potentials.

Arthritic Cartilage



Low Streaming Potentials

Degenerated cartilage is characterized by a loss of proteoglycans and a weakening of the collagen network. Due to a smaller displacement of positive ions relative to negatively charged proteoglycans, compression of arthritic cartilage generates abnormally low streaming potentials.

Visit Our Website:

- For video demonstrations
- For scientific publications

Benchtop ARTHRO-BST™

Laboratory Tool for Cartilage Evaluation



**For Research Use Only
Not for Use in Surgery**

For the Lab!

The Benchtop Arthro-BST™ is a laboratory version of the medical device Arthro-BST™ which provides a **precise non-destructive evaluation** of articular cartilage. It calculates a **quantitative parameter** reflecting the **biochemical composition** and **load-bearing properties** of articular cartilage at each measurement site. It has been developed for researchers interested in using the tool on **ex vivo** articular cartilage only. Provided with **non-sterile** disposable tips, it can be accessorized with a **testing chamber** equipped with a high resolution camera and camera-positioning software for the mapping of large osteochondral samples.



Benchtop Arthro-BST™, Testing Chamber and Camera-Positioning Software

Cartilage Research

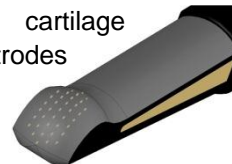
The Benchtop Arthro-BST™ offers a vast array of research opportunities in the field of cartilage repair. It is invaluable for:

- Understanding cartilage diseases, including underlying causes of **cartilage degeneration**
- Developing new therapeutic products and **cartilage repair techniques**
- Conception of reliable osteoarthritis **animal models**
- Creating **reference mappings** of various species

How it Works

Benchtop Arthro-BST™ measures **compression-induced streaming potentials** of articular cartilage. These electric signals are measured using an **indenter** during gentle compression of the cartilage surface (see left panel). The unique indenter design comprises a spherical surface overlaid with an array of **37 microelectrodes**.

The device calculates a **quantitative parameter (QP)** of cartilage electromechanical activity corresponding to the number of microelectrodes in contact with the cartilage when the sum of their streaming potential reaches 100 mV. A high QP indicates weak electromechanical properties and vice-versa. The QP is **reproducible** and **independent** of both the **force applied** and the **indenter orientation**.



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