



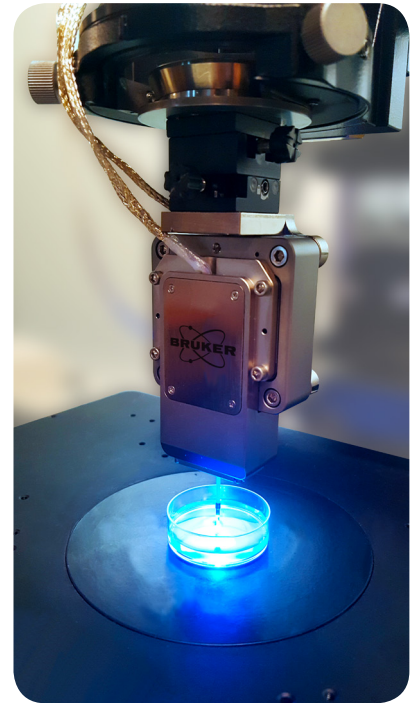
Hysitron BioSoft

● In-Situ Indenter for Soft Biomaterials Mechanical Characterization

Hysitron BioSoft

Enabling Life Changing Discoveries

Bruker's Hysitron® BioSoft™ In-Situ Indenter is a first-of-its-kind instrument specifically designed for multiscale quantitative mechanical testing of biological materials and soft matter, such as hydrogels. BioSoft synchronizes powerful mechanical and optical characterization techniques to achieve a comprehensive understanding of the mechanics of biomaterials. This portable system integrates with existing inverted optical microscopes to bring advanced biomechanical testing capabilities into your laboratory.



Maximized Test Flexibility

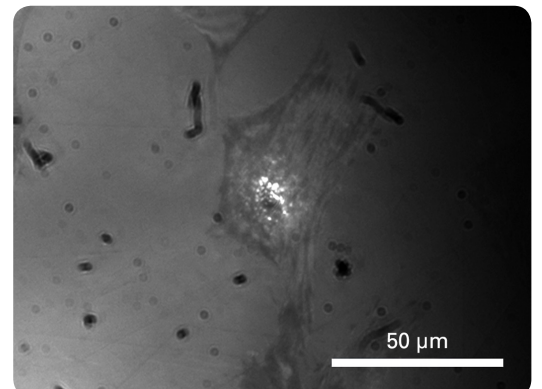
- Integrates with inverted microscopes to characterize a broad range of biological materials
- Easily transports into any laboratory with the included watertight carrying case
- Enables biomechanical testing while maintaining the capability to perform complex experiments with simple operation and multi-user software
- Achieves results quickly with easy changing between a wide variety of probes in under a minute

Quantitative Results

- Provides a unique combination of force sensitivity and displacement range specifically engineered to measure biological specimens from sub-cellular to tissue levels
- Allows for non-destructive multiscale characterization of localized and bulk properties with sophisticated indentation
- Maintains a 750 nN force noise floor and <1 nm displacement noise floor
- Delivers up to 10 mN force and 150 μm displacement range

Advanced BioMech™ Control Module

- 96 kHz maximum data acquisition rate
- Performs interchangeable load, displacement and open-loop control within a single test

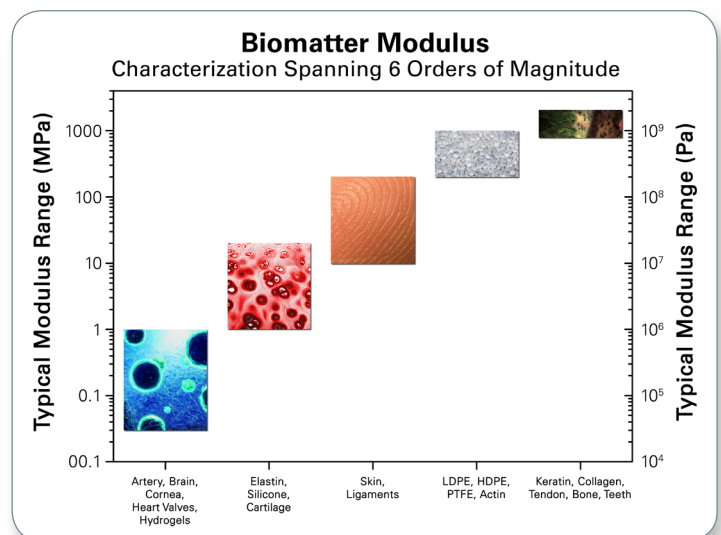
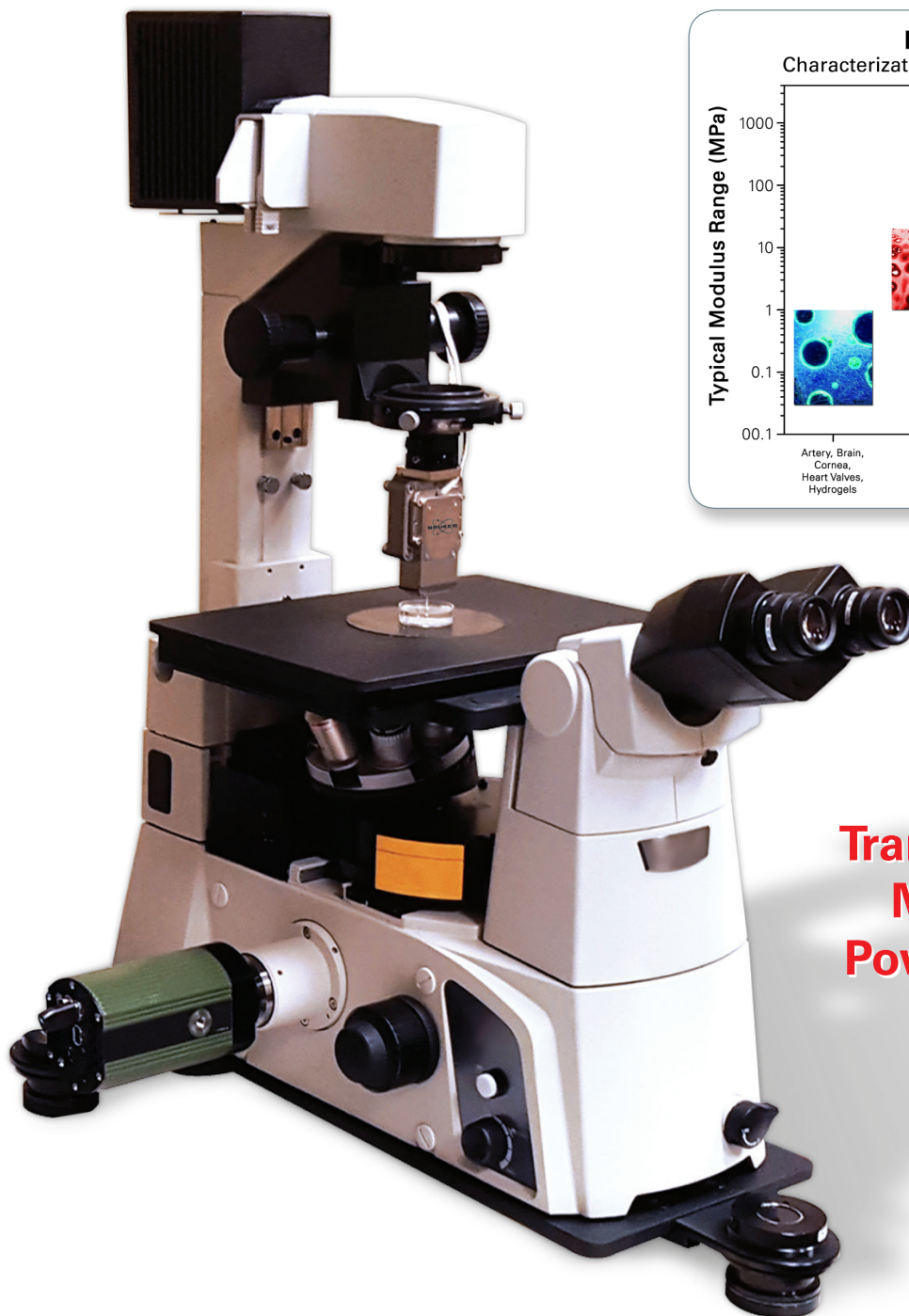


1 mm spherical probe in contact with osteoblast cell.

• Quantitative Soft Biomaterials Characterization

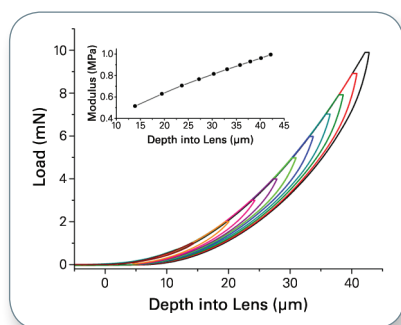
Incorporating decades of knowledge in soft matter testing, Bruker's Hysitron BioSoft provides a unique combination of force sensitivity and displacement range to provide quantitative mechanical property measurements on sub-cellular to tissue levels. Streamlined system operation delivers the results you need quickly, minimizing the need to become an experimental expert and providing an easy portal to biomechanical characterization.

Stiffness • Modulus • Hardness • Creep • Stress Relaxation • Adhesion

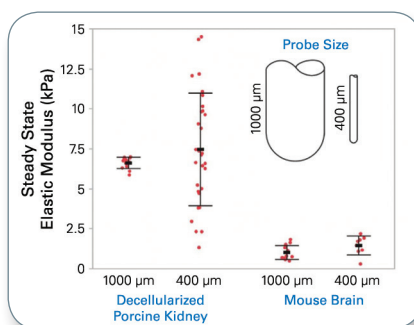


**Transform Your Optical
Microscope into a
Powerful Biomaterials
Test System**

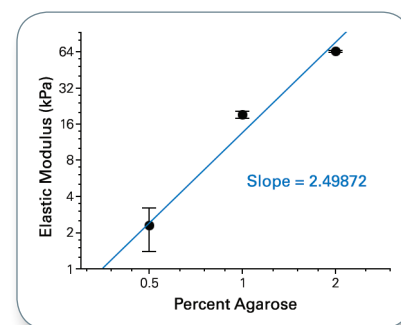
Quantify the Mechanics of the Biological World



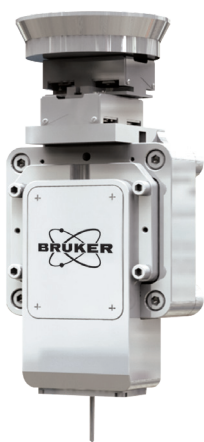
Overlay of 10 individual tests on a contact lens to various displacements.



Easily exchanged probes for optimized test parameters.



Flexible analysis with a variety of simple-to-complex, modifiable models.



BioSoft In-Situ Indenter Features

- Quantitative mechanical characterization for your optical microscope
- Seamless integration with inverted microscopes for maximum test flexibility
- Synchronized mechanical and optical characterization techniques
- Characterization of specimens on sub-cellular to tissue levels
- In-situ observation during mechanical testing
- Advanced targeting and precision
- Access to physiological pressures from Pa to kPa
- Open platform for testing in fluid and environmental control
- Customizable probes

BioSoft In-Situ Indenter Specifications

Normal Loading (Quasi-static Testing)	Maximum Force: 10 mN Load Noise Floor: <750 nN Normal Force Bit Resolution: 1 nN
Normal Displacement (Quasi-static Testing)	Maximum Displacement: 150 μm Displacement Noise Floor: <1 nm Normal Displacement Bit Resolution: 0.006 nm Thermal Drift of Sensor: ≤0.05 nm/sec

BioMech Control Module Specifications

Maximum Data Acquisition Rate	96 kHz
Maximum Data Sampling Rate	48 kHz

● Bruker Nano Surfaces Division

Minneapolis, MN • USA
Phone +1.952.835.6366
productinfo@bruker.com

www.bruker.com/nanomechanical-testing