

unlock the mechanical intricacies of cells and tissues

Transform your research
with Artidis® today!



 artidis

unlocking biology through mechanomics™

Cells and tissues don't just communicate biochemically — they constantly generate and respond to mechanical forces and cues. Exploring these forces with AFM-based nanomechanical measurements reveals powerful insights into cell resilience, disease mechanisms, and the future of diagnostics and therapy. From tissue engineering to cancer research, mechanics matter.

Omics 5.0: Mechanical phenotyping at nano scale

The mechanical properties of cells and tissues play a fundamental role in every aspect of biology. With the power of nanomechanical phenotyping—powered by atomic force microscopy (AFM)—you can combine the mechanical measurements of cells and tissues with genomic, transcriptomic, and metabolomic information. Compatible with a range of cellular and tissue research tools, nanomechanical profiling can help you create a more complete 'omics profile than ever before.



radiomics
pathomics
metabolomics
proteomics
transcriptomics
genomics

mechanomics™



2D & 3D IN VITRO MODELS

Cell lines, spheroids, organoids, and organ-on-a-chip systems enable advanced disease and drug research. Nanomechanical measurements across these models reveal biomechanical signatures—like changes in elasticity—linked to development, metastasis, immune interactions, and therapeutic response.



TENDONS/MUSCLES/CARTILAGES

Engineered models of muscle, tendons, and cartilage provide critical insight into tissue biomechanics, injury response, and regeneration. Nanomechanical measurements in these tissues capture key signatures—such as stiffness, viscoelasticity, and tensile strength—relevant to degenerative diseases, rehabilitation therapies, and musculoskeletal drug development.



HYDROGELS / BIOMATERIALS

Hydrogels are a critical tool for studying and developing a variety of biomedical applications. Nanomechanical measurements of hydrogels can define mechanical properties such as stiffness and elastic modulus, ensuring each hydrogel is appropriate for the specific study application.



ARTIFICIAL TISSUE/IMPLANTS

Skin is our largest organ and our first line of defense against many pathogens. Nanomechanical measurements of bioprinted skin can enable a better understanding of the relationship between skin layers, help identify factors that influence wound healing, and evaluate the safety and effectiveness of topical medications.



ANIMAL/HUMAN/PDX

Biopsies, resections or whole organs are measured to gain accurate genetic, transcriptomic, and metabolomic signatures associated with health and disease. Nanomechanical measurements of tissues can reveal critical mechanical factors and support the development of novel diagnostics and therapeutics.





put your research
at the forefront of
mechanobiology with
a breakthrough device
that you can rely on

A step ahead of the competition

Traditional AFM workflows are plagued by low usability, long measurement times, complex sample and tip preparation, manual calibration steps, and large user dependent variability of results, resulting in slow, error-prone processes. ARTIDIS® transforms this experience, bringing next-level, precision AFM to any laboratory and setting a new standard for reliable, high throughput nanomechanical phenotyping.

What does Artidis provide that others do not?

SPEED | Prep samples in only 10 minutes and obtain nanomechanical signatures in only a few hours—without destroying your sample.

USABILITY | A fully automated, push-button system with integrated intelligence and ready-to-use consumables means you don't need to be an AFM expert to obtain cutting edge AFM measurements.

TRACEABILITY | Trace each and every measurement via the linked data setup between the ART-1® and ArtidisNet.

PORTABILITY | With a small, lightweight footprint and an autonomous power supply, the device can be easily moved between laboratories or from bench to bench for accurate, 24/7 measurements.

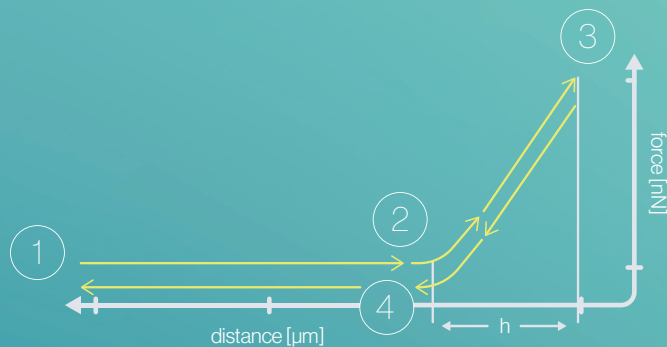
CONTROL | Easily monitored and controlled environment with minimal handling.

REPRODUCIBILITY | Fully automated measurement under a monitored and controlled environment. Highly reproducible results through automated calibration, minimal user involvement and automated analysis pipelines.

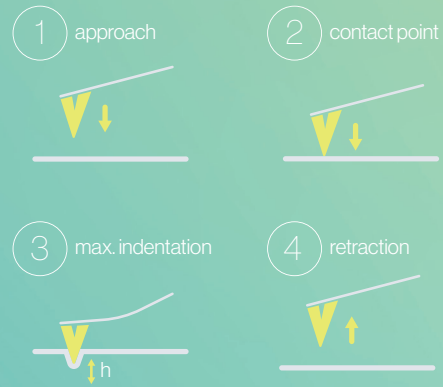


revolutionizing mechanomics™ workflow

Next-generation 'omics discoveries require next-generation instrumentation. The ART-1® is the first fully autonomous atomic force microscope, offering fast-start, high-throughput, highly reliable and reproducible nanoscale measurements on a range of tissues, gels, and materials. Developed, validated, and produced according to the highest quality medical device standard (ISO 13485), Artidis® allows you to measure what no one else can—with just the push of a button.



The Artidis® uses a 20-nanometer tip to record the exact amount of indentation measurements across the sample surface you need, enabling quantification of local mechanical properties—including Young's modulus, dissipation, adhesion, and topography—at the molecular level. Fully automated measurements are performed in a closed system under physiological conditions and in a non-destructive manner, preserving your samples for additional assays.



MODULUS

Determining the elasticity/stiffness of the sample.



ADHESION

Determining the stickiness of the sample.



DISSIPATION

Determining the viscosity of the sample.



TOPOGRAPHY

Determining the surface roughness and texture of the sample.

Autonomous AFM functions

1. Highest reliability AFM calibration routines, completely user-independent for precisely controlled forces down to the piconewton range.
2. Built-in high and low resolution imaging systems allow easy and high precision navigation using small and large biological samples.
3. Automated tip detection and cantilever beam alignment.
4. Automated cantilever pick-up system without the need for manual cantilever mounting on the chip holder.
5. Cantilever collision detection system enables high-yield measurement of any sample, including very rough samples.
6. Automated cantilever force monitoring and drift compensation enable accurate and reproducible long-term measurements.

Specimen loading functions

1. Data matrix labelled specimen holders and procedure kits for simple and fast mounting of a variety of biological specimens.
2. Fast tissue mounting kits for any biological sample type.
3. Large specimen loading area (centimeters) and force mapping area (millimeters), not the conventional micrometers.

ai-driven insights

The ART-1[®] device is connected to **ArtidisNet, Artidis[®] AI-driven cloud platform**, for secure data storage and comprehensive data analytics.

KEY FEATURES INCLUDE:

- Cockpit visualization and unbiased analyses of structured data.
- Possibility to overlay ART-1[®] specimen profiling images and nanomechanical measurements with histology, fluorescence images, or any other kind of imaging.
- Connectivity and data exchange with open platforms to facilitate integration into your laboratory's data ecosystem.
- AI-powered comprehensive data analytics.
- ISO27001 certification for secure data storage.



Cloud Platform
(anywhere/anytime access)



AI-Powered



Precision Medicine



Histology



Digital Pathology
Support



Digital Radiology
Support



eCRF



Interoperability
(HL7 Standard)



Light
Microscopy



Electron
Microscopy



Phase Contrast
Images



Fluorescence



ELEVATE

Your research with a premium, medical grade system that measures what others can't.



GAIN

Deeper insights into the nanomechanical properties of cells and tissues.



ACHIEVE

Cutting-edge measurements without the need for prior AFM expertise.



INCREASE

The impact of your research with AI-driven discovery and innovation.

we work with
you to tailor **test**
protocols for
your samples

Get started with Artidis®

Are you ready to integrate nanomechanical phenotyping into your research and development efforts? Contact us today to learn more about the Artidis® technology and how it can integrate into your research program. We have individual financing options and also offer in-house measurement services to bring the power of AFM to any research laboratory or organization, regardless of budget.

Who we are

Artidis® is a pioneering clinical stage health technology company that aims to set the gold standard in tissue analysis and therapy optimization. By combining its nanotechnology platform for rapid tissue analysis with a holistic data solution, Artidis® accelerates drug discovery, tissue engineering, and personalized treatment. Artidis® focuses its research and development efforts on solid tumors to enhance responses to chemo, immuno, and cell therapies, driving precision in cancer care. The company has offices in Basel (Switzerland), Barcelona (Spain), and Houston (Texas, US).



Our partners

MD Anderson
Cancer Center



Universitätsspital
Basel



Clínic
Barcelona

Baylor
College of
Medicine

MOFFITT
CANCER CENTER

st Claraspital
In besten Händen.

Vall
d'Hebron
Barcelona Campus Hospitalari

UT Southwestern
Medical Center