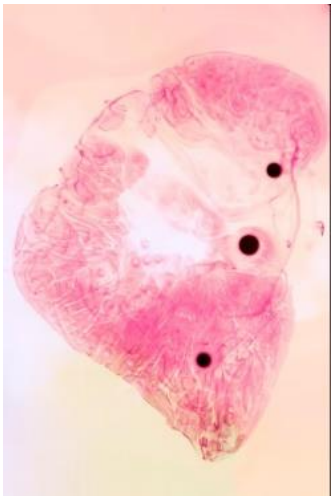
STELAR Going Further beyond conventional NMR

Stelar and the University of Turin present:

A NEW SOLUTION FOR ADVANCED TUMOR TISSUE CHARACTERIZATION

REVOLUTIONIZING TUMOR TISSUE ANALYSIS WITH *FAST FIELD CYCLING NMR RELAXOMETRY*

WELCOME TO THE FUTURE OF TUMOR ANALYSIS

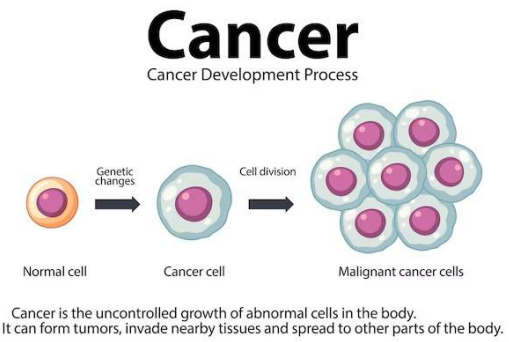


At Stelar, we are eager to propose a new cutting-edge solution in the field of cancer research, based on our expertise in **Fast Field Cycling (FFC) NMR Relaxometry technology**.

This innovative NMR application allows a **non-invasive**, **fast,** and **simple characterization of tumoral tissues**, providing researchers and clinicians with a new approach for measuring a key biomarker linked to the treatment response and tumor progression.[1]

Diagnostic and Pre-clinical Challenge

- Accurate tumor characterization is key to understanding **tumor gradation** and its **aggressiveness**, optimizing treatments.
- Traditional imaging and biopsy methods often miss subtle changes, delaying therapy adjustments.
- Improved monitoring techniques allow for earlier, more precise treatment modifications, enhancing therapy effectiveness and patient outcomes.[2]



References

1. M. Pasin, G. Ferrante (Stelar Srl), S.Geninatti Crich (Dep. of Molecular Biotechnology and Health Sciences, University of Torino) - Case Study: In Vivo Tumor Characterization - FFC application notes: in vivo © 2019 Stelar srl _ AN 191001_in vivo

2. Baroni, Simona, et al. "Exploring the tumour extracellular matrix by in vivo Fast Field Cycling relaxometry after the administration of a Gadolinium-based MRI contrast agent." Magnetic Resonance in Chemistry 57.10 (2019): 845-851.

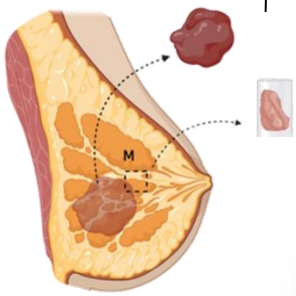
BENCHTOP: Small Footprint instrumentation
SOFTWARE: Research-based, easy-to-apply to Variable Magnetic field strength

The Solution

FAST FIELD CYCLING (FFC) NMR RELAXOMETRY

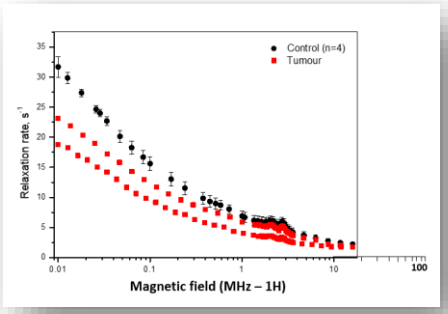
Fast Field Cycling (FFC) NMR Relaxometry offers a cutting-edge, non-invasive approach to promptly measure a critical biomarker, closely linked to tumor structure, cell density, and treatment responsiveness.

Removal of tumor mass - sample collection



Sample measurement and analysis

NMRD profiles of the tumor tissues:

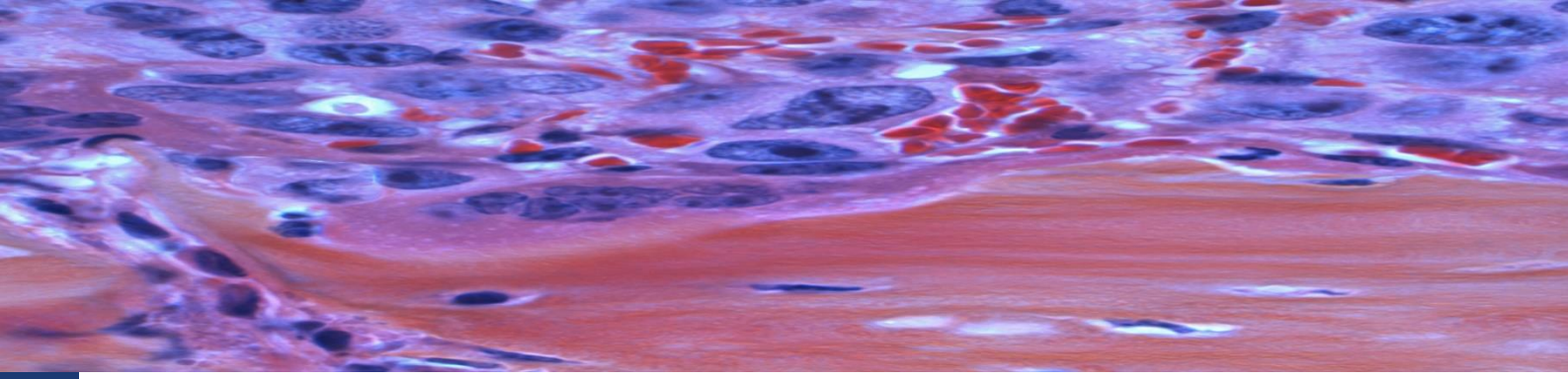


Control

Tumor

KEY BENEFITS of FFC NMR RELAXOMETRY

- **Ultra-Sensitive:** detect minute changes in tumor structure before they become visible. High sensitivity and specificity.
- **Early Treatment Insights**: promptly monitor therapeutic efficacy, thus reducing response times, compared to traditional imaging techniques and other analysis methods.
- **Non-Invasive and Non-Destructive:** characterizing tumoral tissues with a new approach, that preserves tissue integrity.



WHY CHOOSE STELAR'S FFC NMR RELAXOMETRY FOR TUMOR TISSUE CHARACTERIZATION?

- **Pre-clinical Diagnostic tool:** detecting the staging of tumors and their level of aggressiveness, for advanced and improved preclinical diagnostics.
- **World-Class Hardware:** built by Stelar, trusted by leading institutions worldwide.
- **Proven Scientific Validation:** backed by top research institutions and key publications. Stelar's FFC NMR system, backed by key breast cancer studies, offers crucial insights into tumor biology and treatment response, advancing personalized oncology and more effective cancer therapies.[3,4]

Interested in learning how Stelar's FFC NMR Relaxometry can transform your research?

CONTACT US TODAY TO LEARN MORE!

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References

3. Baroni, S., Bitonto, V., Ruiu, R., Rapisarda, S., Aime, S., & Crich, S. G. Intracellular Water Lifetime as a Tumor Biomarker to Monitor Doxorubicin Treatment via FFC-Relaxometry in a Breast Cancer Model. Frontiers in Oncology, 11. https://doi.org/10.3389/FONC.2021.778823
4. In Vivo Breast Cancer Study: Baroni, S., Ruggiero, M. R., Bitonto, V., Broche, L. M., Lurie, D. J., Aime, S., & Crich, S. G. (2020). In vivo assessment of tumour associated macrophages in murine melanoma obtained by low-field relaxometry in the presence of iron oxide particles. Biomaterials, 236, 119805.