UNIVERSITÀ DEGLI STUDI DI MILANO

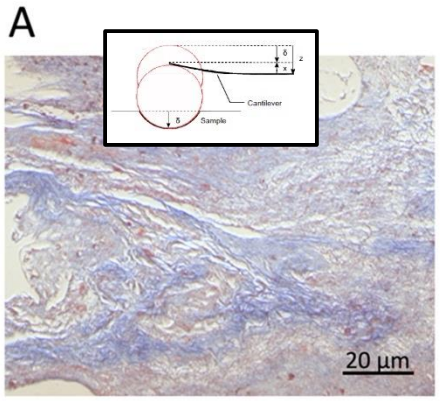
FONDAZIONE IRCCS ISTITUTO NAZIONALE DEI TUMORI

Master Thesis project

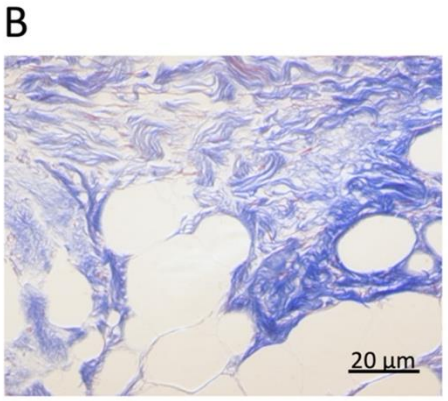
Investigation of the mechanical properties of human peritoneum tissue under cancer progression and metastases development

The mechanical properties of cells and their microenvironment dynamically change during the progression of diseases like cancer or inflammatory syndromes. The project, in collaboration with Istituto Nazionale dei Tumori (INT), aims to study the modification of cell and matrix rigidity in cases of tumoral tissue coming from human patients exploiting atomic force microscopy -based nanomechanical and force spectroscopic techniques. The results will provide a solid database for the elaboration of diagnostic approaches based on mechanical quantitative nanoscale measurements.

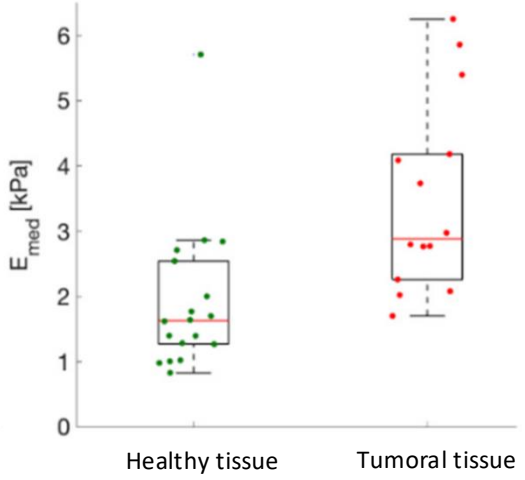
Puricelli et al., RSI 86, 033705 (2015), DOI: 10.1063/1.4915896
Nebuloni et al., Sci. Rep. 6, 22522 (2016), DOI: 10.1038/srep22522
Shimshoni et al., Matrix Biology 96, 47-68 (2021). DOI: 10.1016/j.matbio.2020.11.001
Lorenc et al., biorXiv 2022, DOI: 10.1101/2022.08.17.504271



Healthy tissue



Tumoral tissue



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