



UNIVERSITÀ DEGLI STUDI DI TORINO

I@UNITO – Visiting Scientists

Scientific area	Scientific responsible	Host Department	Type of activity	Start of mobility	Language
7	Alberto Bardelli	Oncology	Biomedical Research	01/01/2017	English
Type of fellowship	Junior (less than 40 years old) 3 months fellowship				
Title of the research project	The impact of liquid biopsies in diagnosis and treatment of colorectal cancer.				
Description of the research project	<p>Circulating tumor free DNA (ctDNA) in plasma of patients with solid tumors may allow the study of the mutational profile, avoiding surgical or invasive procedures to access tumor tissue. The term liquid biopsies includes the analysis in plasma of any product produced by the tumor, including circulating tumor cells and microRNAs. ctDNA has been studied to determine tumor burden, response to therapies or mechanisms of resistance to some biological agents. This technique also allows the molecular characterization of tumors to define their sensitivity to targeted therapies. This project proposes a longitudinal study in colorectal cancer patients resected with curative intent, but with a high risk of relapse. The first aim is to define the role of liquid biopsies in determining tumor burden at diagnosis. The second aims at monitoring liquid biopsies during follow up to analyze minimal residual disease after treatment. The third plans a tumor heterogeneity analysis through the study of potential clonal evolution. Candidate genes will be analysed by droplet digital PCR in order to detect the presence of molecular abnormalities of colon cancer in plasma.</p>				
Profile Description	<i>Post doctoral</i>				
Research objectives	<p>We propose the following objectives:</p> <ol style="list-style-type: none"> 1. Create a collection of ctDNA. Follow the standard procedures of manipulation and storage of samples. 2. Extraction of ctDNA from plasma of patients treated with targeted therapies. Quantification of ctDNA and evaluation of its suitability for genetic analysis. 3. Molecular characterization of ctDNA. Evaluation of candidate target-therapies genes. 4. Bioinformatic analysis and evaluation of results. 5. Follow up of patients with gene mutations. 				
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