CURRICULUM VITAE FIAMMA BUTTITTA (FEBBRAIO 2023)

Fiamma Buttitta is Full Professor in Pathological Anatomy (06/A4; MED/08) at the University of Chieti, Department of Oral, Medical and Biotechnological Sciences.

She trained in surgical pathology at University of Pisa under the guidance of Professor Francesco Squartini and then she began to address the problems and diagnostic implications of molecular pathology.

EDUCATIONS AND QUALIFICATIONS

- Medical Degree in Medicine and Surgery with full marks, University of Pisa, Italy
- Professional specialization in Pathological Anatomy and Histology with full marks, University of Pisa
- Ph.D. in "Experimental Oncology and Tumor Morphology", University of Pisa.
- Assistant Professor of Pathological Anatomy, University of Chieti-Pescara
- Full Professor in Pathological Anatomy (06/A4; MED/08)

TRAINING PERIODS SPENT ABROAD

[1989, gennaio – 1990, dicembre]: Guest Researcher Laboratory of Tumor Immunology and Biology, NIH, Bethesda, MD, USA. –

1994 (1 luglio- 31 luglio): Laboratory of Tumor Immunology and Biology, NIH, Bethesda, MD, USA.

In this period of time, Buttitta acquired molecular knowledge and procedures in the genomic cloning field and she started to apply DNA amplification, by first machines for PCR, just marketed at that time, in her research studies.

This activity led to the discovery of a new tumor gene, INT6, involved in the genesis of mouse and human malignancies, as well as in the regulation of the gene translation process, from prokaryotes to humans (J Virology 1995; 134 citations).

Subsequently, INT6/eIF3e showed to be a double-edged sword that has both oncogenic and tumor suppressive abilities. In addition to its role in tumorigenesis, its silencing has recently been suggested as a potential therapeutic strategy to improve cell survival and function after ischemic injuries.

PATENTS:

patent holder US Serial N° 08/385,998 for “Nucleotide and deduced amino acid sequences of a new tumor gene int-6, and the use of reagents derived from these sequences in diagnostic analysis, vaccines, immunotherapy and gene therapy”, relating to the discovery and characterization of a new tumor gene, int-6, involved in the genesis of mouse and human cancers, as well as in the regulation of the gene translation process, from procariotes to humans.

RESEARCH INTERESTS

Her scientific activity is focused largely on cancer diseases and, in particular, on cancer-related genetic alterations that affect the response to drug treatment in patients with lung, ovarian and breast cancer. In recent years, she has been particularly involved in the development of highly sensitive methodologies suitable for identifying, on liquid biopsy, additional genetic alterations that develop during cancer progression and that are predictive of sensitivity or resistance to drug therapy. With this aim, she paid attention to in-depth sequencing by massive parallel sequencing, evaluating different panels of genes to answer specific clinical questions.

RESULTS OF PARTICULAR SCIENTIFIC RELEVANCE

- In the cancer field, mutational studies have led to results of interest that have been published in high-impact journals. They include:

(a) demonstration of p53 mutations role in the resistance of ovarian cancer to platinum-based drug treatment (Br J Cancer 1997).

b) demonstration of a higher frequency of EGFR gene mutations in particular categories of patients with metastatic lung cancer (J Clin Oncol 2005). The results are currently a reference in the main national and international guidelines (773 citations).

c) scientific evidence of the presence of HER2 and BRAF mutations in Non-Small Cell Lung Tumours in Caucasian subjects (Int J Cancer 2006; J Clin Oncol 2011).

d) the correlation between histotype and specific gene mutations: mucinous lung adenocarcinoma and KRAS mutations (J Pathol 1996), lepid-papillary lung adenocarcinoma and EGFR mutations (J Clin Oncol 2005), papillary lung adenocarcinoma and BRAF mutations (J Clin Oncol 2011), large lung cell carcinoma and NTRK mutations (Hum Mutat 2008), lobular breast cancer and PIK3CA mutations (J Pathol 2006) , medullary and ductal breast cancer and P53 mutations (Cancer Res 1993).
(e) scientific evidence of the high frequency of artefact mutations (induced by deamination processes) that can adversely affect molecular diagnostics in clinical practice and identification of possible solutions (NEJM 2006).

- Many of the most recent activities are aimed at demonstrating biomolecular predictive markers in the peripheral blood of cancer patients for monitoring the effectiveness of targeted biologic drugs. In particular, EGFR mutations in plasma of patients with advanced lung cancer, being treated with first, second and third generation TKI (J Thorac Oncol. 2015; PLoS One 2014); Kras mutations in the plasma of colon-rectal cancer patients, being treated with anti-EGFR antibodies (ongoing studies); BRAF mutations in the plasma of melanoma patients, being treated with anti-BRAF drugs (Vemurafenib, dabrafenib and anti-Mek) (ongoing studies).

She is Principal/ Investigator in several Funded Research Projects

The results of her studies have been presented to National and International Meetings and published on peer-reviewed international journals.

SCOPUS PARAMETERS (April 2020)

112 papers published in peer reviewed journal

H-index 49 (SCOPUS)

Total Citations 8301; More than 100 citations: 30 Papers

Chieti, 16-02-2023

Fiamma Buttitta