ISTITUTO NAZIONALE TUMORI
IRCCS - Fondazione Pascale

Titolo del Progetto	*Studio del ruolo del metagenoma in tumori Testa-collo mediante tecniche omiche.*
Acronimo	*HeNomics*
Tema di Riferimento	SPOKE – 7 TEMA 2 – Supporto ad attività di analisi multi-omiche di campioni biologici umani
Keywords	*Microbioma, metaboloma, citochinoma, viroma, HNSCC, HCC, single cell transcriptomics*
Durata (max 15 mesi)	15 mesi
Costo totale progetto	€ 724.375,00
Contributo totale richiesto	€ 724.375,00

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Innovative Immunological Models

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Istituto Nazionale Tumori

IRCCS – PASCALE, NAPOLI

- The National Cancer Institute – IRCCS "Fondazione Pascale" of Naples (INT-NA) is a monothematic oncology IRCCS structured in 11 departments, 9 of which are clinical-experimental.
- The Pascale coordinates the Campania Oncology Network (ROC), has drawn up the Oncology Diagnostic-Therapeutic Care Pathways (PDTA) and coordinates the GOM (multidisciplinary oncology groups) of the main oncological pathologies.
- Within the Institute there are 4 phase I structures accredited by the Ministry of Health (3 clinics and 1 laboratory).
- The Institute coordinates and participates in research and development projects in the biomedical oncology field funded by National (e.g. AIRC) and International (e.g. European Community) Public and Private Bodies.
- In particular, the group of Dr. Luigi Buonaguro (winner of the BAC «HeNomics», Spoke 7) was the coordinator of the European project HEPAVAC funded under the 7th Framework Programme (Contract No. 602893).

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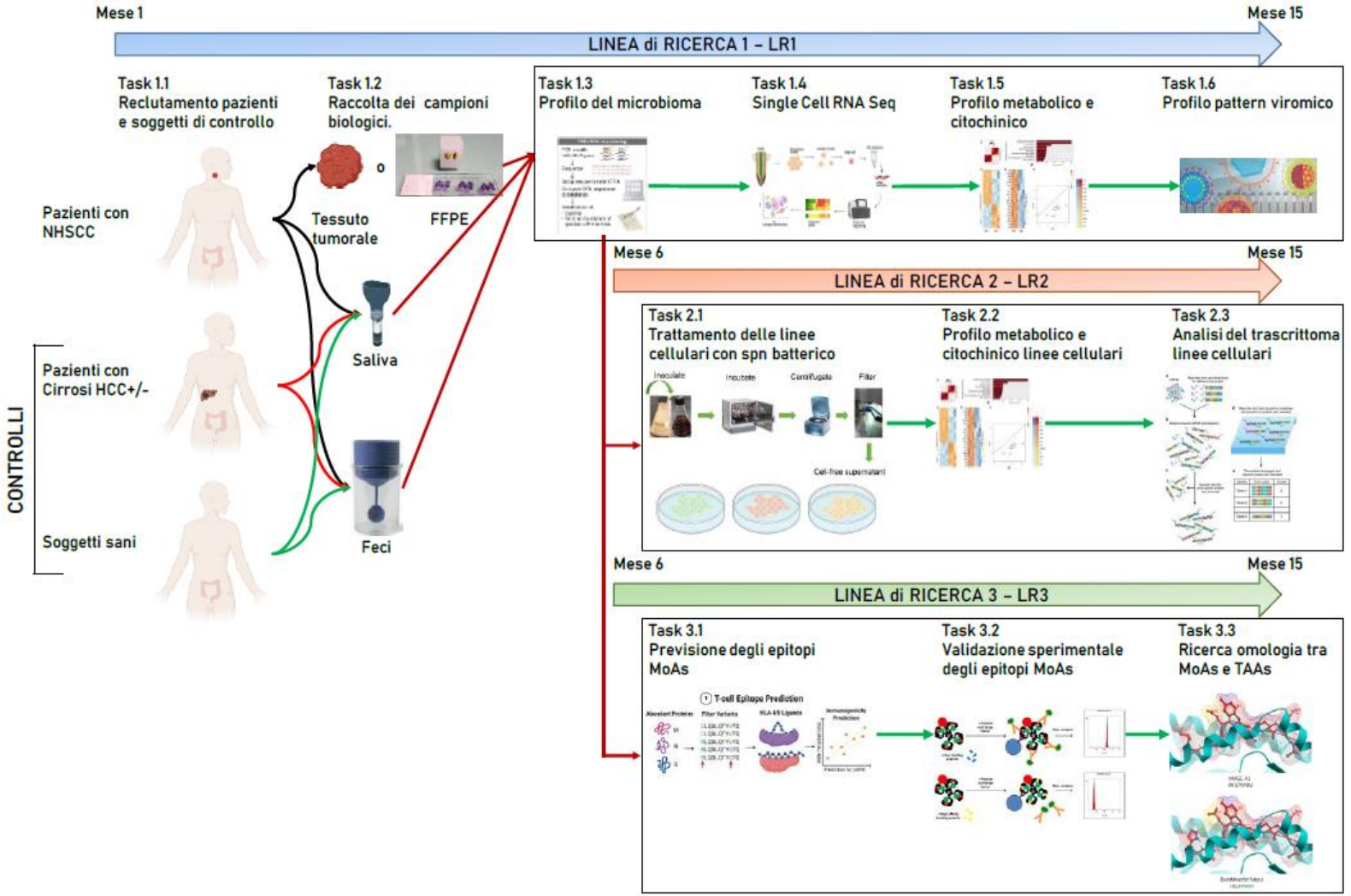
SCHEMA and AIMS of HeNomics

The overall aim of the proposal is to study the microbiome pattern in patients with head and neck squamous cell carcinoma (HNSCC) and evaluate its diagnostic, pathogenetic and prognostic role.



Contribution of HeNomics to the Spoke 7 Research Program

Theme 2. Support to activities related to multi-omics analyses of human biological samples.

The HeNomics project contributes to all 3 objectives set out in spoke 7, focusing on head and neck cancer (HNSCC):

a) Metabolic and metagenomic analysis of oral and intestinal microbiota.

b) Single-cell transcriptomic analyses of tissue samples

c) Bioinformatic and biostatistical validation and Next Generation Sequencing (NGS) analysis.

Research line 1 – LR1: study of the microbiome composition of patients with HNSCC and 200 controls.

Research line 2 –LR2: evaluation of the effect of products from bacteria of the NHSCC-associated microbiota on cell lines derived from HNSCC at different stages of tumor progression.

Research line 3 –LR3: prediction of MoAs from bacteria of the NHSCC-associated microbiota with high sequence and conformation homology with TAA (molecular mimicry). Such MoAs can in fact induce CD4+/CD8+ T cells cross-reactive with tumor cells and play a central role in the progression of the neoplasia

Contribution of HeNomics to the HEAL ITALIA Research Program and Precision Medicine

The HeNomics project fully contributes to the program by providing essential data for the various aspects:

It will provide new methods and a clinical data network to support translational research for advanced diagnosis and therapy in the fight against HNSCC;

It will provide data relevant for personalized and precision medicine for HNSCC. This will allow defining an optimized strategy for disease prevention, diagnosis and treatment for each person, based on their unique characteristics. To this end, diagnostic methods, Omics technologies, molecular mechanism analysis will be developed and validated.