# Triggering Haematological Adoptive T-cell Immunotherapy Strategies by HUnting Novel T-cell receptors

## Fact Sheet

Project Information

**THAT IS HUNT**

Grant agreement ID: 752717

Project website

**DOI**
10.3030/752717

Project closed

**EC signature date**
24 March 2017

**Start date**
1 January 2018

**End date**
31 December 2019

**Funded under**
EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

**Total cost**
€ 168 277,20

**EU contribution**
€ 168 277,20

**Coordinated by**
OSPEDALE SAN RAFFAELE SRL
Italy

## Objective

Recent encouraging clinical results obtained with engineered T lymphocytes and increasing advances in the genome editing
field, have opened new opportunities for T-cell receptor (TCR) gene therapy as an immunotherapeutic approach for cancer.
Unfortunately, the broad applicability of this treatment is still hampered by the possible mispairing of exogenous/endogenous

TCR chains and by the limited number of high avidity tumor-specific TCRs. While the first issue has been successfully
addressed by the hosting lab with the development a TCR gene editing protocol, the identification of novel tumor-specific
TCRs is urgently required and this is the aim of my research proposal. We have the unique opportunity to combine the highly
complementary expertise of the hosting lab in T-cell biology/genetic transfer and of the applicant on immune repertoire
sequencing. We will target acute myeloid leukemia (AML) and hypothesize that by exploiting intrinsic features of AML (i.e.
ability of AML blasts to differentiate into potent antigen presenting cells expressing tumor antigens), the functional fingerprint
induced by AML on tumor-reactive T-cells, and cutting-edge technologies (i.e. next generation sequencing; ligandome
landscape analysis), we will provide a comprehensive immunoprofiling of tumor-specific T-cells and isolate tumor TCR
specificities. Results obtained in this study will streamline TCR hunting studies in solid tumors, leading to the generation of a
TCR library for different antigens and HLA restrictions, thus rendering TCR gene editing an innovative off-the-shelf
treatment available for a high number of cancer patients. Awarding this fellowship will greatly enhance researcher's career
not only by providing the opportunity to widen scientific knowhow and acquire new skills, but also by enabling the researcher
to address a major bottleneck currently limiting the full exploitation of the rapidly growing field of cancer immunotherapy.

## Fields of science (EuroSciVoc)

medical and health sciences > medical biotechnology > genetic engineering > **gene therapy**

medical and health sciences > basic medicine > immunology > **immunotherapy**

medical and health sciences > clinical medicine > oncology > **leukemia**

natural sciences > biological sciences > genetics > **genomes**

## Programme(s)

H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions MAIN PROGRAMME

H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

## Topic(s)

MSCA-IF-2016 - Individual Fellowships

## Call for proposal

H2020-MSCA-IF-2016

See other projects for this call

## Funding Scheme

MSCA-IF-EF-SE - Society and Enterprise panel

## Coordinator

**OSPEDALE SAN RAFFAELE SRL**

Net EU contribution

**€ 168 277,20**

Total cost

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**VIA OLGETTINA 60**
**20132 Milano**
**Italy**

Region

**Nord-Ovest > Lombardia > Milano**

Activity type

**Private for-profit entities (excluding Higher or Secondary Education Establishments)**

Links

Contact the organisation  Website
Participation in EU R&I programmes
HORIZON collaboration network

**Last update:** 16 August 2022