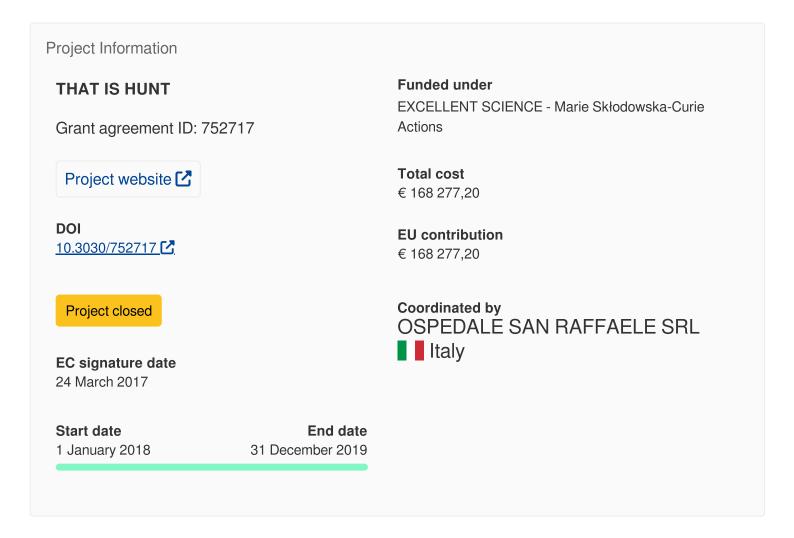
Triggering Haematological Adoptive T-cell Immunotherapy Strategies by HUnting Novel T-cell receptors



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

#### **Fact Sheet**



## **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 tumorspecific 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) 1

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 C

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

€ 168 277,20

Address

**VIA OLGETTINA 60** 

20132 Milano





Nord-Ovest > Lombardia > Milano

Activity type

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

Links

Contact the organisation Website Medicipation in EU R&I programmes Medicipation network Network Medicipation network Network Medicipation network Medicipation network Network Network Network Network

Last update: 16 August 2022

**Permalink:** https://cordis.europa.eu/project/id/752717

European Union, 2025