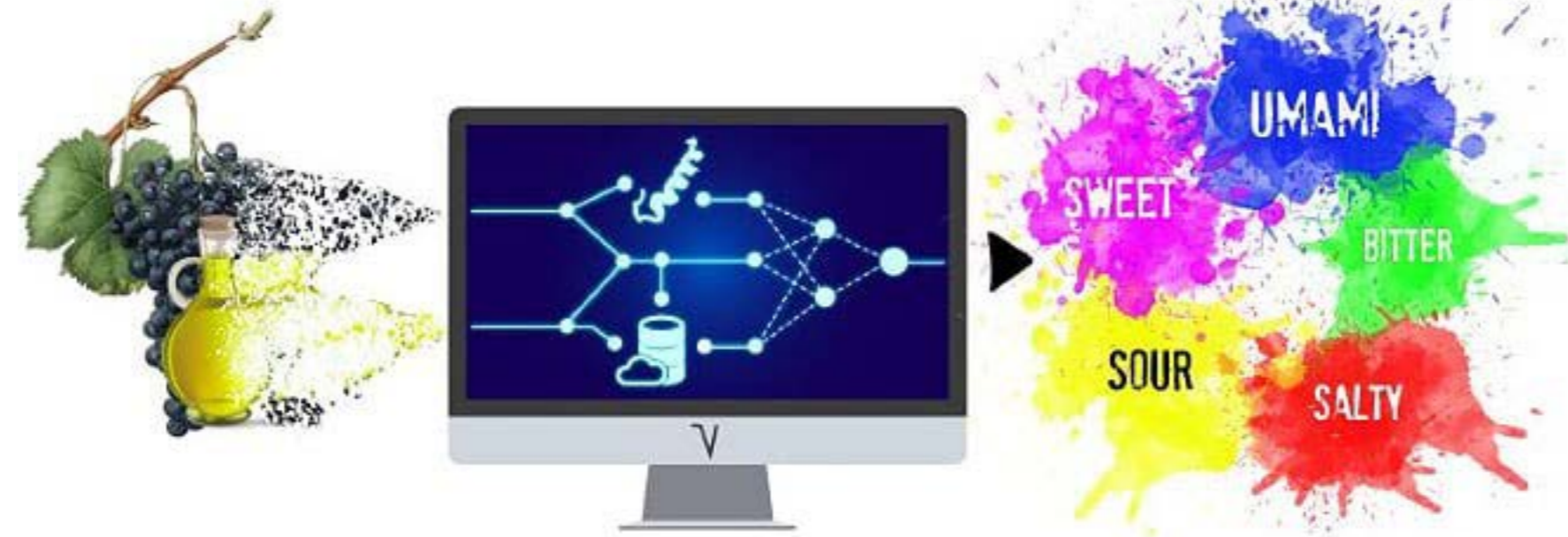




# V I R T U O U S

*Virtual tongue to predict the organoleptic profile of mediterranean Ingredients and their effect on hUman hOmeostasis by means of an integrated compUtational multiphysicS platform*





# VIRTUOUS

## The Taste

Taste is one of the five senses and it is the sensory modality that helps organisms to avoid toxins and indigestible materials and to recognize and assume nutrients. We often use the word “taste” to describe a sensation arising from the oral cavity.

## The Project in Pills

VIRTUOUS is a virtual tongue made by an integrated computational framework able to screen food for natural ligands targeting taste receptors. The proof of concept of VIRTUOUS research will be based on basic ingredients of Mediterranean diet (such as wine and olive oil), following the paradigm of our diet: “good and healthy”.

# WORK PACKAGES



## PROJECT MANAGEMENT

Efficient overall management ensuring effective progress towards goals & objectives

Ensure that goals & objectives are clearly defined and visible throughout project

Monitor progress between planned & actual activities  
Ensure that the TOK plan is followed up.

Ensure that EC project reports, deliverables & milestones are met.



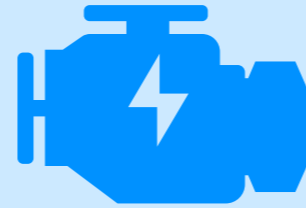
## VIRTUOUS TONGUE INFRASTRUCTURE

Collection of the Requirement for VIRTUOUS computational platform.

Design/implementation of cloud/distributed infrastructure components defined by the architectural design.

Implementation of appropriate interfaces among single-layer modelling approaches.

Definition and Implementation of end-user web-interface.



## VIRTUOUS TONGUE ENGINES

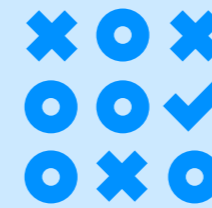
Requirements for the single layer models.

Structural models of Protein Receptors.

Identification of ligand-protein interaction properties.

Definition of a Protein Network Evolution Model.

Identification of ligand translational effects in taste and possible effects on human homeostasis.



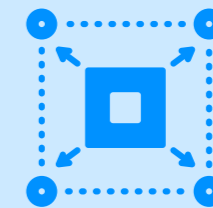
## VIRTUOUS TRIALS

Determination of chemical composition of investigated food (wine and olive oil).

Organoleptic Profile Trials for investigated food  
Test the VIRTUOUS web service and compare the prediction with real trials.

Improve the VIRTUOUS platform by feedback based on use and comparison with real trials.

Efficient overall management ensuring effective progress towards goals & objectives.



## COMMUNICATION, DISSEMINATION & EXPLOITATION

Communicate and disseminate project goals, procedures results to stakeholders.

Integrate Dissemination and communication from the project start, to achieve the highest level of interest.

Intellectual Propriety development and management.



## Events

Two dedicated **workshop-events**, open to the scientific community, will be organized by the Consortium on **"Organoleptic Profiling by in silico tools"**.

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## Our Deliverables

The refined **three dimensional models** of the protein receptors.  
The protein network model and map of translational effects."





## Coordinator

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**STARTING DATE**

1st December, 2019

**PROJECT DURATION**

48 months

**COORDINATOR**

Marco Agostino Deriu

**COST**

€ 1.108.600

**EU CONTRIBUTION**

€ 1.108.600

## Partners



**POLITECNICO DI TORINO**  
Marco Agostino Deriu



**MISSING TECH**  
Emanuele Mottola



**ENGINLIFE-ENGINEERING SOLUTIONS**  
Giacomo Di Benedetto



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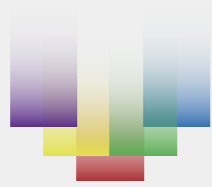


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Dario Piga



**ATHINA-EREVNITIKO KENTRO KAINOTOMIAS STIS  
TECHNOLOGIES TIS PLIROFORIAS, TON  
EPIKOINONION KAI TIS GNOSIS**  
Athanasios Kalogeras





VIRTUOUS

*“A VIRTUOUS  
tongue toward a  
VIRTUOUS food”*

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