## Fact Sheet

### Project Information

**Grant agreement ID:** 950133

**DOI**

10.3030/950133

**Project terminated on 15 March 2023**

<table>
<thead>
<tr>
<th>Start date</th>
<th>End date</th>
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<tr>
<td>1 August 2022</td>
<td>31 July 2027</td>
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**Funded under**

EXCELLENT SCIENCE - European Research Council (ERC)

**Total cost**

€ 1,399,632.00

**EU contribution**

€ 1,399,632.00

**Coordinated by**

TECHNISCHE UNIVERSITAET MUECHEN

Germany

### Project description

**Novel approach to study allosteric regulation in CRISPR-Cas9 nucleoprotein complex**

Allosteric regulation in biochemistry is the regulation of an enzyme by binding an effector molecule at a site other than the active site of the enzyme. Effectors that enhance the protein's activity are called 'allosteric activators', in contrast to 'allosteric inhibitors' that decrease the protein's activity. CRISPR-Cas9 is a large nucleoprotein complex, widely employed as a genome editing tool. Its intricate allosteric signaling involves the multi-domain Cas9 protein and its associated nucleic acids, controlling
the system's function and specificity. The EU-funded Allosteric-CRISPR project will investigate the allosteric regulation in CRISPR-Cas9 by introducing a novel synergistic approach as an emerging powerful tool to investigate allostery. This approach combines state-of-the-art theoretical methods with network models derived from graph theory.

**Fields of science**

natural sciences > biological sciences > biochemistry > biomolecules > nucleic acids
medical and health sciences > medical biotechnology > genetic engineering > gene therapy
natural sciences > biological sciences > biochemistry > biomolecules > proteins
natural sciences > mathematics > pure mathematics > discrete mathematics > graph theory
natural sciences > biological sciences > genetics > genomes

**Keywords**

Allostery  CRISPR-Cas9  protein  nucleic acid interactions
molecular dynamics

**Programme(s)**

H2020-EU.1.1. - EXCELLENT SCIENCE - European Research Council (ERC)  MAIN PROGRAMME

**Topic(s)**

ERC-2020-STG - ERC STARTING GRANTS

**Call for proposal**

ERC-2020-STG

See other projects for this call

**Funding Scheme**
Coordinator

TECHNISCHE UNIVERSITAET MUENCHEN

Net EU contribution
€ 1 399 632,00

Address
Arcisstrasse 21
80333 Muenchen

Germany

Region
Bayern > Oberbayern > München, Kreisfreie Stadt

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

Other funding
€ 0,00

Beneficiaries (1)

TECHNISCHE UNIVERSITAET MUENCHEN

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€ 1 399 632,00

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