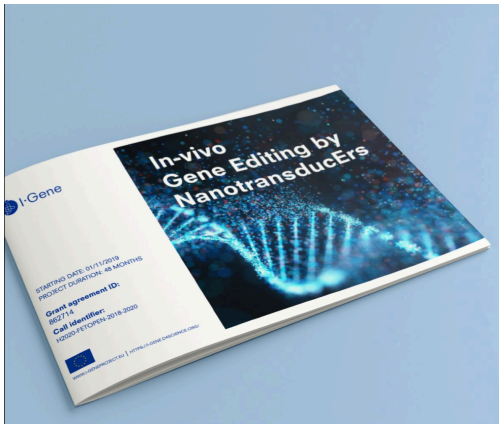
Dear Readers,

The I-GENE team is pleased to welcome you to the 4th issue of the I-GENE newsletter. The project has been running for over two and a half years now, and all the work packages are in full speed, as we approach the midway point of the project duration. We are in the stage to estimate the real potential of our technology, and we are concentrating on designing and establishing sustainable and socially acceptable technologies for genome editing.
This special issue is dedicated to you, dear Ukrainian colleagues. If you feel that our project could offer you an opportunity for collaboration, please, contact us!

Prof. Vittoria Raffa
I-GENE coordinator



ABOUT I-GENE PROJECT

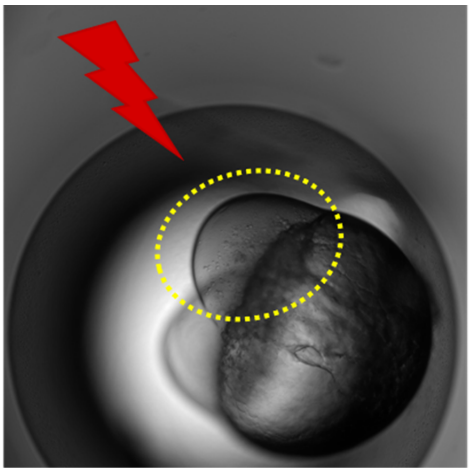
The Objective of I-GENE project to re-design the story of genome editing by developing a photo-switchable system. The I-GENE project is founded by EU (grant agreement ID: 862714) under the FET-OPEN scheme of HORIZON 2020, fostering novel ideas for radically new technologies.

Please follow our social media and website to get updates on I-GENE
https://i-geneproject.eu/project/
https://www.facebook.com/igeneproject/

FAR AWAY SO CLOSE!

The times are still difficult, but finally, we are able to travel, work alltogether and share our expertise in such a multidisciplinary project. At the labs of ProChimia in Gdynia, Polland, researchers are now focussing on the design of the tunable nanotransducer. This winter our PhD student Soultana Konstantinidou had the pleasure to visit and collaborate with our colleagues in ProChimia. Nothing is better than enjoying a mind-refreshing walk in the snow after an intense working day!

Soultana Konstantinidou (PhD student, University of Pisa) and Agnieszka Lindstaedt (ProChimia) in front of the Experiment Science Center on a snowing day at work.



Here you can see the irradiation of a zebrafish embryo at the two-cell stage. The targeted cell is indicated by the dashed yellow line.

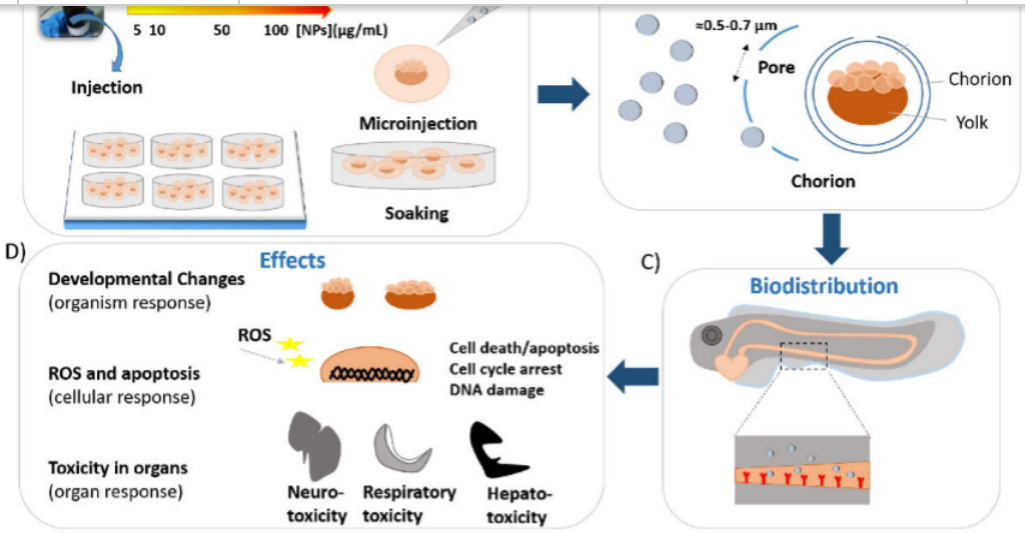
SCIENTIST AND LASERS!

The trials for irradiating zebrafish embryos get started. We want to understand how the nanotransducer can be used *in vivo* and activated by irradiation. What about the safety of the treatment? What about the efficacy? Here, at the University of Pisa (Dept. of Physics and Dept. of Biology) we are trying to answer these questions, with the help of our collaborators from ITT. Our goal is to restrict the activity range of our nanotransducer in time and space at a very high resolution. And as a matter of fact, we were able to selectively irradiate targeted cells in a zebrafish embryo without affecting the surrounding ones. Could this technique be used to destroy specific cells, like cancer cells *in vivo*? There are still many open questions!

AND AGAIN STRIKES THE ZEBRAFISH!

Still not convinced that Zebrafish is a poweful tool in biological science?
Please download our last publications!!

You will learn that Zebrafish is a common model system in toxicological studies because it allows to evaluate the safety-profile of several compounds, included nanoparticles.
https://doi.org/10.3390/ijms22126372
https://doi.org/10.1155/2022/3313016

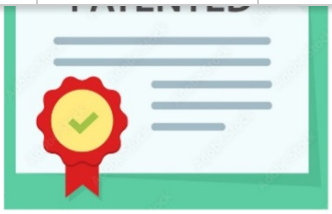


THERE IS A "LIGHT" IN THE MELANOMA TREATMENT

The I-GENE coordinator has been interviewed by *About Pharma And Medical Devices* about the photo-activatable AuNP- Cas9 technology we are developing. Professor Vittoria Raffa explains how the I-GENE project would be a breakthrough in melanoma treatment and in the advancement of *in vivo* editing therapies. The I-GENE strategy would improve safety, as it would 1) be limited to the skin region affected by melanoma, 2) operate exclusively under laser exposure, and 3) target a specific DNA region. This “light-activated” drug would allow for a less invasive treatment compared to the cancer therapies currently in use, and for cost effective, personalized therapies. Importantly, it would be easily and highly deliverable to patients, allowing to overcome one of the main obstacles of *in vivo* gene-editing applications. You can read the complete article on the March issue of the journal https://www.aboutpharma.com/wp-content/uploads/2022/03/APMD_196_bassa-3.pdf).

THE FIRST I-GENE PATENT HAS BEEN GRANTED!!

After a long procedure, we got a positive communication from EPO regarding our patent PCT/IB2020/050432. Please, feel free



3rd I-GENE SUMMER SCHOOL

Dear friends, the third I-GENE summer school will finally take place in person!

The summer school will be held in collaboration with the University of Pisa (Italy), and other prominent international experts from the industry and academia. Through this event, we wish to gather international students to explore together with us the fascinating world of zebrafish model and the CRISPR/Cas technology. Our participants will be allowed to have an exciting insight into this eruptive technology and will be provided with a fundamental understanding of how researchers actually do integrate it in their daily work experience. Hands-on laboratory sessions will be integrated with online workshops and frontal lectures, to offer all participants a complete experience. We are still working on the agenda that will be available soon. Please stay tuned on our website to get the latest updates of this event, and don't forget to subscribe in time since we have a limited number of participants.

Looking forward to meeting you soon.

Discover more

I-GENE Project Consortium

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Please follow our social media and website to get updates on I-GENE mission and research activities:

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