

TRAIN: SINERGIJE Z OSTALIMI PROJEKTI

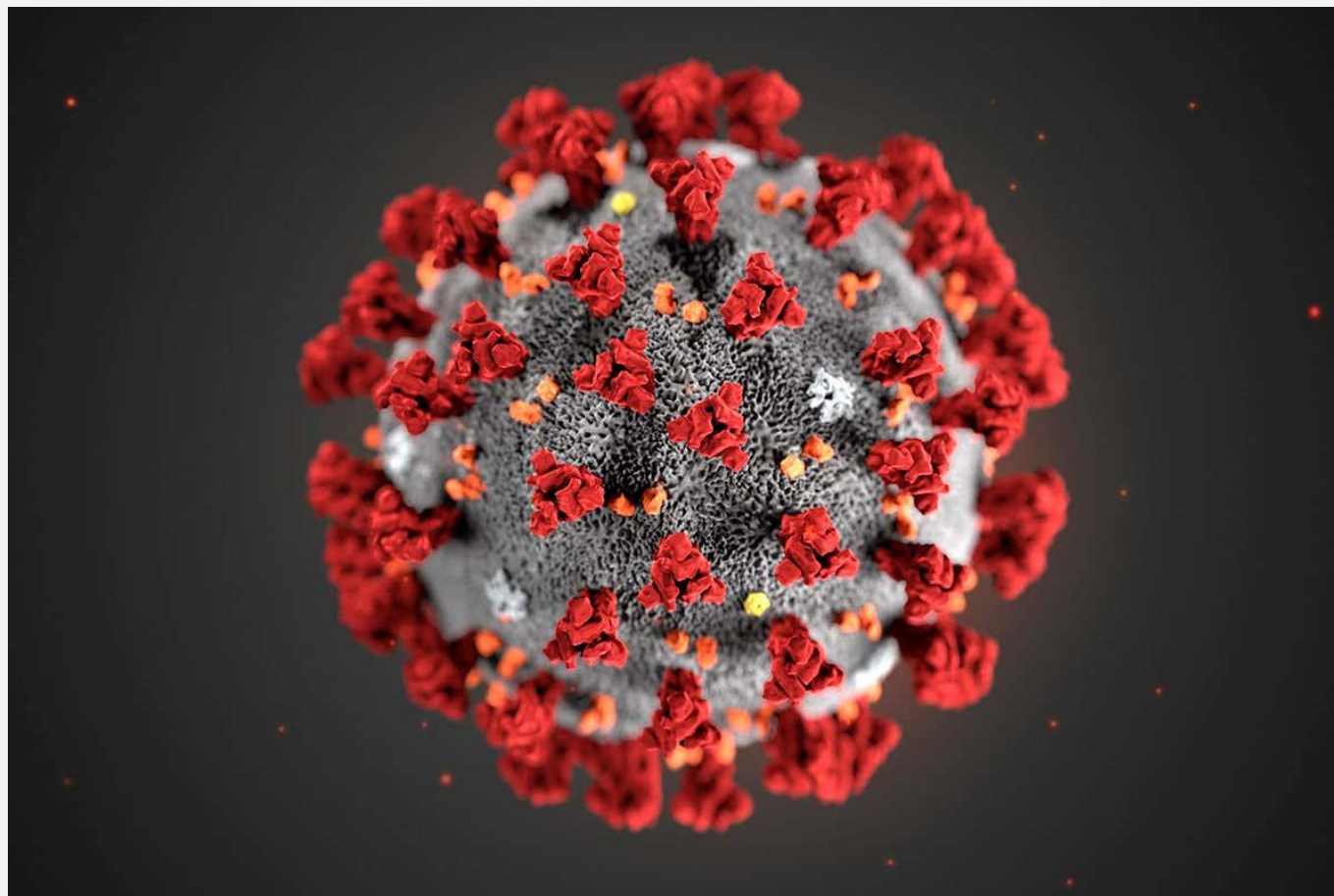
- *Dott. Ing. Francesco Menegoni, PhD*

Cilj projekta TRAIN

[...] izboljšati sodelovanje med ključnimi biomedicinskimi subjekti, kot so raziskovalni inštituti, univerze in podjetja [...]

[...] Za povečanje inovativnosti in konkurenčnosti v biomedicinskem raziskovalnem sektorju

COVID-19



Makro trendi v biotehnologiji



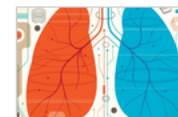
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AI and digital health

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How Artificial Intelligence Will Change Medicine

Claudia Wallis



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Hunting for New Drugs with AI

The pharmaceutical industry is in a drug-discovery slump. How much can AI help?

David H. Freedman



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Rise of Robot Radiologists

Deep-learning algorithms are peering into MRIs and x-rays with unmatched vision, but who is to blame when they make a mistake?

Sara Reardon



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Can AI Fix Medical Records?

Digitized patient charts were supposed to revolutionize medical practice. Artificial intelligence could help unlock their potential.

Cassandra Willyard



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Wiring Minds

Successfully applying AI to biomedicine requires innovators trained in contrasting cultures.

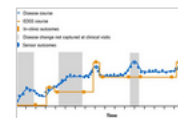
Amit Kaushal & Russ B. Altman



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Digital health: Smartphone-based monitoring of multiple sclerosis using Floodlight

Mike Baker, Johan van Beek & Christian Gossens



Kako je TRAIN pospešil ostale projekte v zvezi s COVID-19

Primer 1: Hitro serološki testi za COVID-19

Raziskovalni inštitut: ICGEB

Podjetja: Biovalley Investments Partner (BIP) in svetovni proizvajalci



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- **2020-03-13:** ICGEB izolira COVID-19 virus in zgradi bio-banko
- **2020-03-21:** BIP analizira hitre teste, po predlogu Sheridan (Nature, March 23th, 2020) in Foundation for Innovative New Diagnostics (FIND).
- **2020-03-30:** BIP primerja teste 8 producentov.
- **2020-04-05:** BIP kupi 200 testov 2 najboljših EU producentov.
- **2020-04-14:** ICGEB validira te hitre teste

Primer 1: Hitro serološki testi za COVID-19

Raziskovalni inštitut: ICGEB + Regionalni univerzitetna zdravstvena avtoriteta

Podjetja: Biovalley Investments Partner (BIP) in svetovni proizvajalci

kit	KHB		
Note	Dati produttore	T>7	T0
True Positive	25	25	8
False Positive	2	1	1
True Negative	52	29	29
False Negative	2	0	4
Sensitivity	93%	100%	67%
Specificity	96%	97%	97%
Positive predictive value	93%	96%	89%
Negative predictive value	96%	100%	88%

- **2020-06-09:** Validiramo hitre teste na bolnišničnem osebju (N=500)

Primer 2: protivirusno zdravilo za COVID-19

Raziskovalni inštitut: ICGEB

Podjetja: Biovalley Investments Partner (BIP)

- **Biovalley zagotovi protivirusno zdravilo in ICGEB ga testira na COVID-19 *in vitro***
- 2020-03-18: rodi se ideja o uporabi protivirusnega zdravila
- 2020-03-24: zdravilo prispe na ICGEB
- 2020-05-18: predobjava članka na BioRxiv:
<https://www.biorxiv.org/content/10.1101/2020.05.18.101691v1>

Primer 2: protivirusno zdravilo za COVID-19

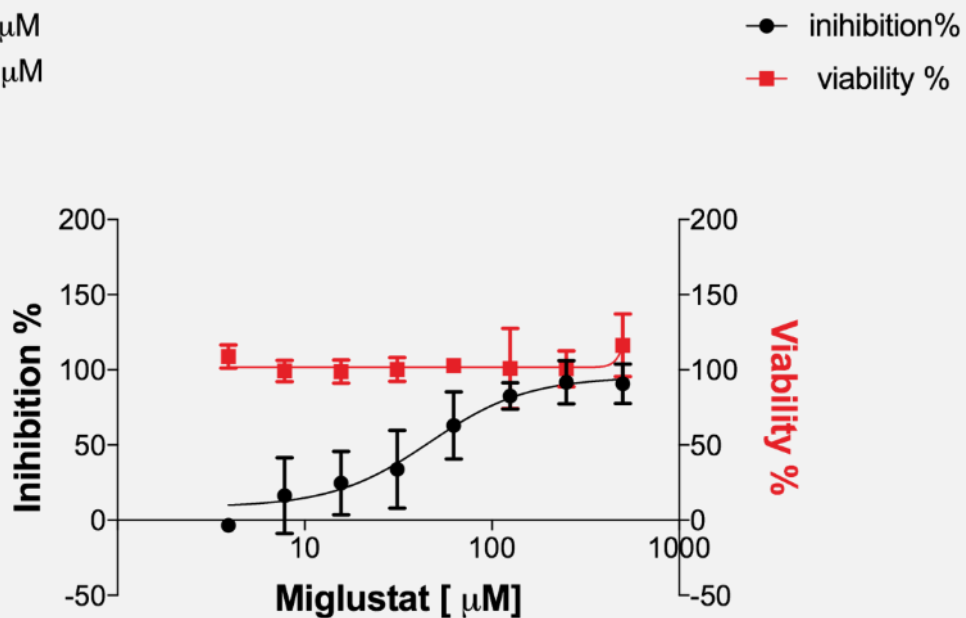
Raziskovalni inštitut: ICGEB

Podjetja: Biovalley Investments Partner (BIP)

EC_{50} : 44.1 μ M

CC_{50} : > 500 μ M

SI > 11



- Načrtovano je klinično testiranje

Kako je TRAIN navdihnil nov projekt na HPC

Evropska strategija Digital 2020-2030

- Definicija “Akta o podatkih” v 2020 in zakon v 2021
- Načrtujemo investicije v višini 1.000 M€ za podatke
- Načrtujemo investicije v višini 600 M€ za “Connecting Europe Facility Program»
- Investicije v storitve v oblaku, pri čemer tekmujemo z ZDA in Kitajsko (Nemški Gaia-X)
- Beli članek o AI



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- **Beli članek o AI**

Establishing a world-leading artificial intelligence computing and data infrastructure in Europe: a comprehensive data and computing infrastructure using as a basis High Performance Computing (HPC) centres and edge computing capacities, through the EuroHPC Joint Undertaking. The deployment of a next generation high performance computing infrastructure will be complemented by a European federation of interoperable, flexible and scalable cloud and computing infrastructures and targeted cloud-based artificial intelligence services (to be funded through Horizon Europe and the Digital Europe Programme). Supporting the deployment of common European data spaces to facilitate pooling and sharing of data from across Europe is also crucial and will be addressed in a specific initiative.

Primer 3: HPC

Raziskovalni inštitut : SISSA + ICTP

Industrializacija: Tržaška dolina, Eurotech

Tržaška dolina :
prvi korak k HPC, ki temelji na evropski strojni tehnologiji
(Eurotech), ki je na voljo za razvoj AI / biotehnologije

Primer 3: HPC

Raziskovalni inštitut : SISSA + ICTP

Industrializacija in financiranje: Tržaška dolina, Eurotech

- 2020-01-10: rodila se je idela, da bi ponudili HPC privatnim podjetjem
- 2020-01-24: identifikacija preliminarne lokacije
- 2020-03-06: naročilo prvega dela HPC
- 2020-07-01: zagon HPC

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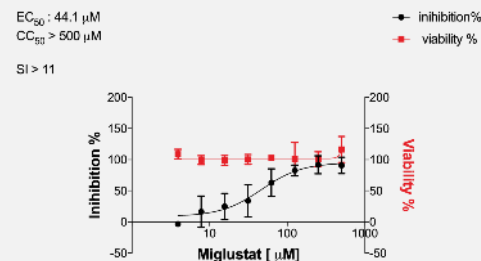
[...] Za povečanje inovativnosti in konkurenčnosti v biomedicinskem raziskovalnem sektorju

Rapid Test on Covid-19

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True Positive	25	
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Anti-Viral drug for Covid-19



Private HPC for AI in health



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