ΕΛΛΗΝΙΚΟ ΙΝΣΤΙΤΟΥΤΟ ΠΑΣΤΕΡ
INSTITUT PASTEUR HELLENIQUE

Fighting Infectious Diseases for the last 100 years

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Συμμετοχή τμήματος Δημόσιας Υγείας σε Εθνικές Δράσεις για την αντιμετώπιση της COVID19

- **«Εμβληματική Δράση για την αντιμετώπιση του ιού SARS-CoV-2. Επιδημιολογική μελέτη στην Ελλάδα μέσω εκτεταμένων εξετάσεων ανίχνευσης ιού και αντισωμάτων, αλληλούχισης ιικών γονιδιωμάτων και γενετικής ανάλυσης ασθενών»**

  Εθνικό Σκέλος του ΠΔΕ της ΓΓΕΤ με κωδ. αριθ.2020ΣΕ01300001

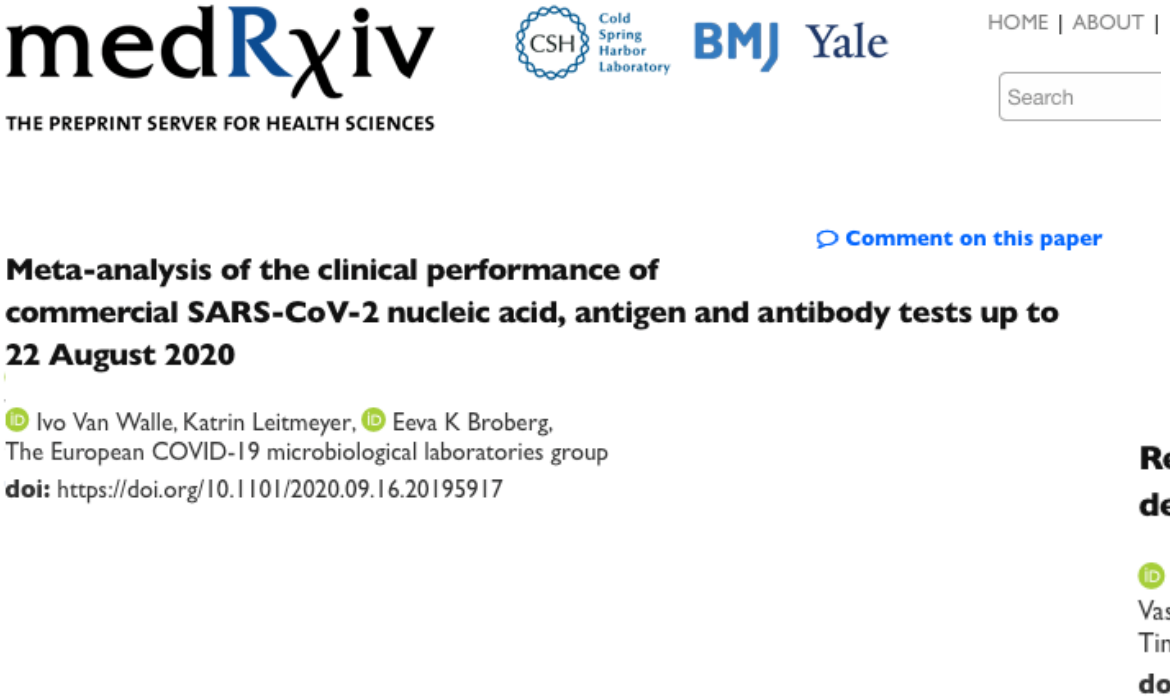
- Παθητική ανοσοθεραπεία με έγχυση πλάσματος από αναρρώσαντες ασθενείς για την αντιμετώπιση βαρείας λοίμωξης COVID-19.

  Κλινική Μελέτη Φάσης ΙΙ

First line response	Rapid standardisation of WHO-recommended real time PCR assays for SARS-CoV2 detection
Public Health services	More than 100,000 real time PCR tests performed
Development and evaluation of Diagnostics	• Evaluation of two innovative LAMP-PCR-based assays for SARS-CoV2 detection • Meta-analysis of commercial SARS-CoV-2 nucleic acid, antigen and antibody tests

Development and evaluation of SARS-CoV-2 Diagnostics

Public Health Dpt - Bioinformatics and Applied Genomics Unit – HPI



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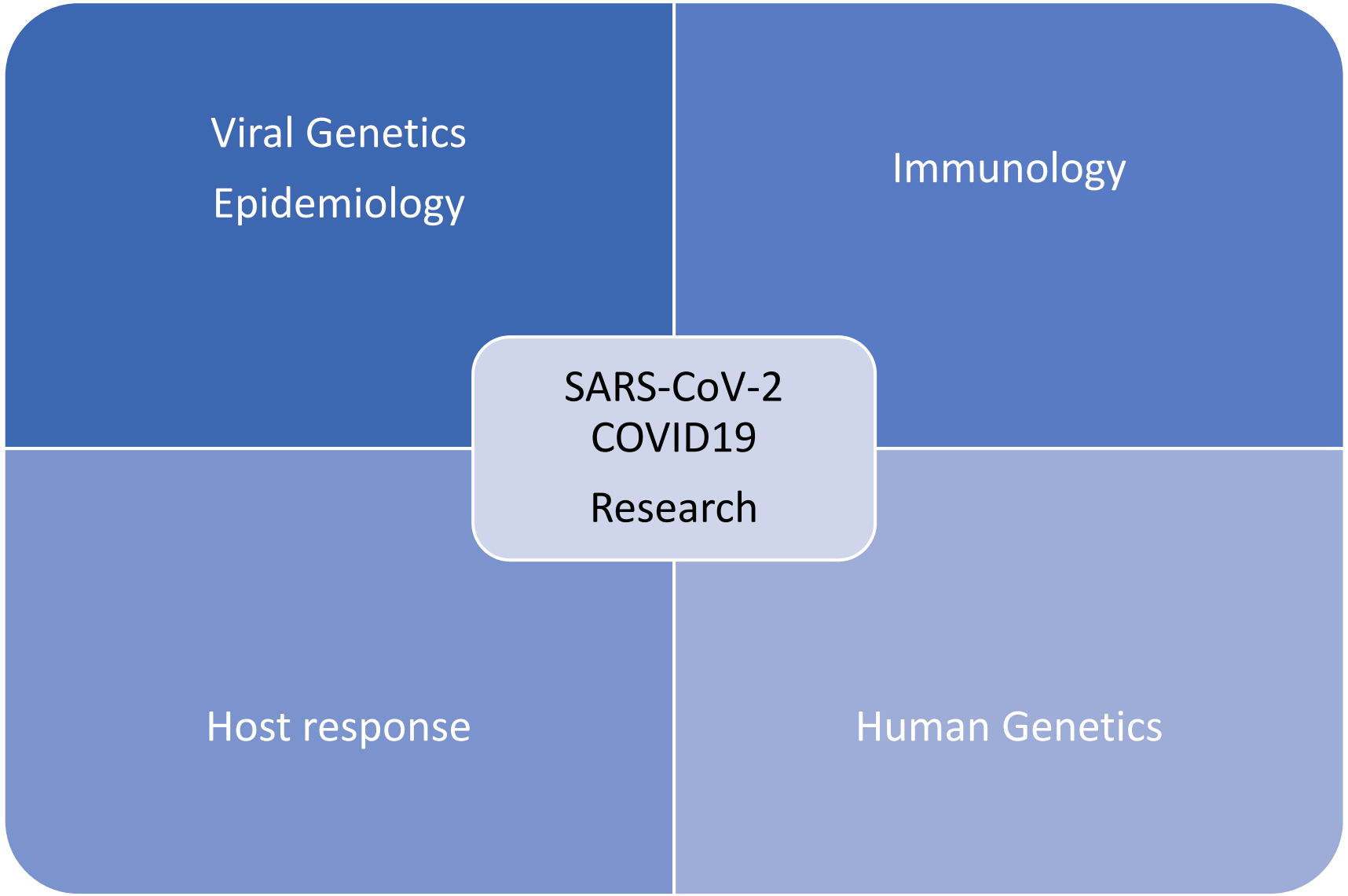
Viral Genetics
Epidemiology
Immunology
SARS-CoV-2
COVID19
Research
Host response
Human Genetics

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Viral Genetics - Epidemiology

- Intra-host genomic plasticity and variability
- SARS-CoV-2 whole genome sequencing

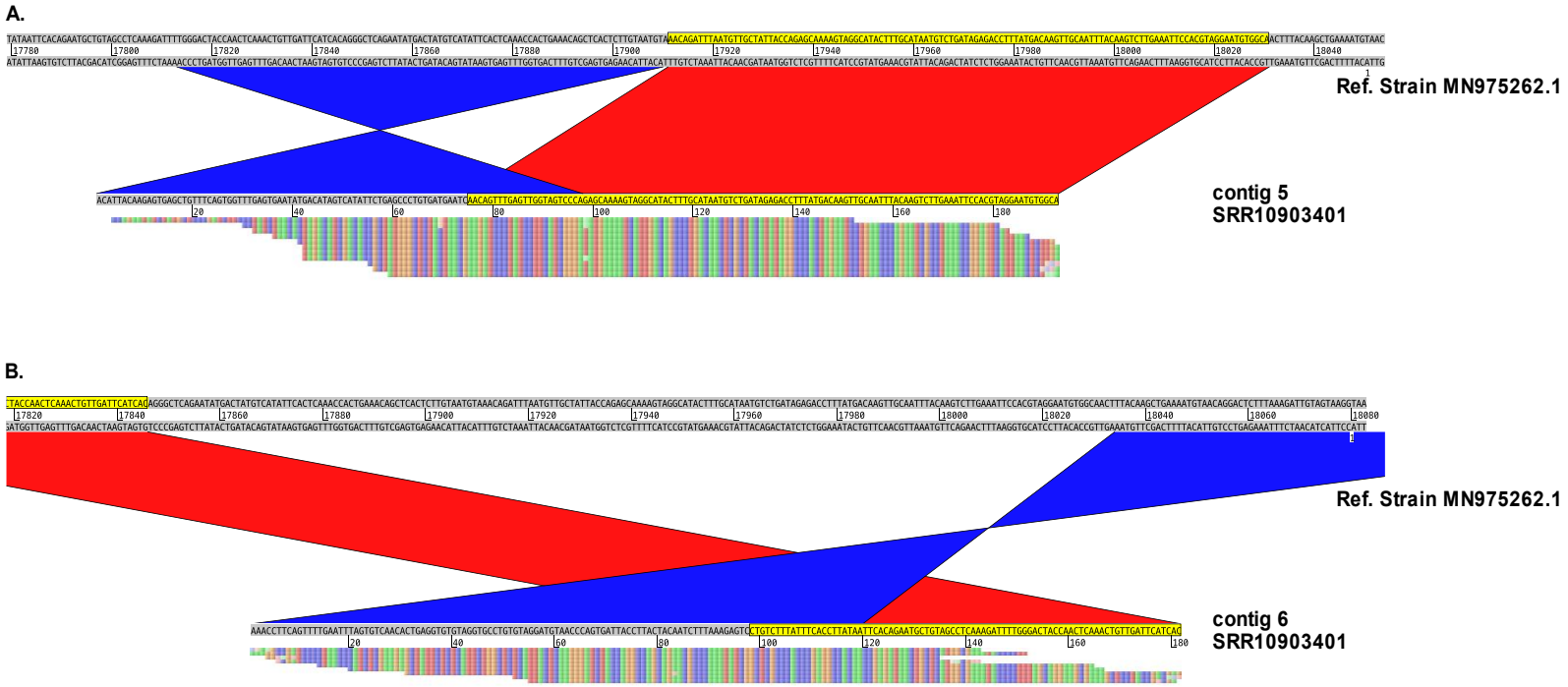
Intra-host genomic plasticity and variability

Bioinformatics and Applied Genomics Unit - HPI

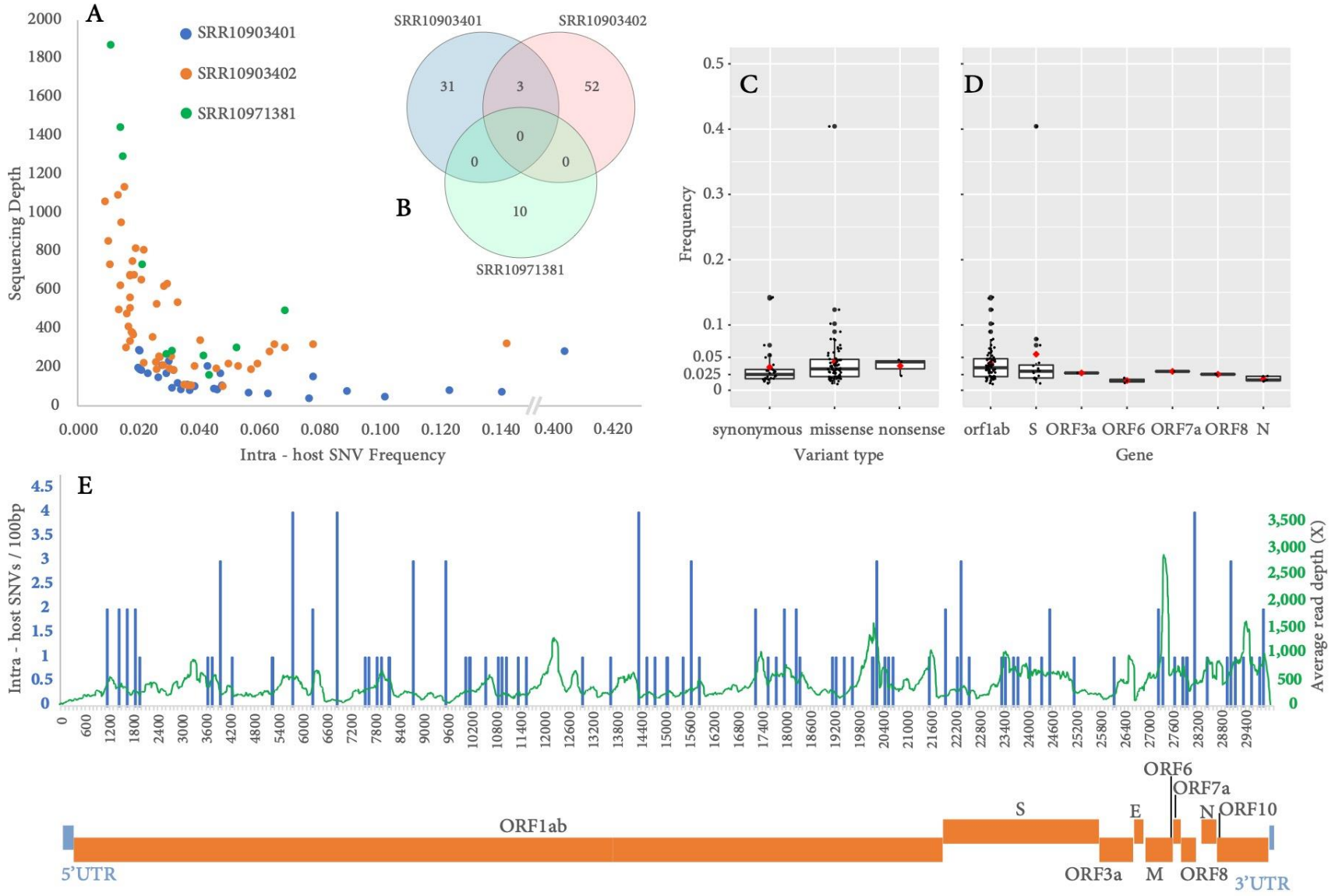
J Clin Virol. 2020 Oct;131:104585. doi: 10.1016/j.jcv.2020.104585. Epub 2020 Aug 11.

SARS-CoV-2 exhibits intra-host genomic plasticity and low-frequency polymorphic quasispecies

Timokratis Karamitros [1], Gethsimani Papadopoulou [2], Maria Bousali [2], Anastasios Mexias [2], Sotirios Tsiodras [3], Andreas Mentis [4]



Intra-host genomic plasticity and variability



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SARS-CoV-2 whole genome sequencing - GISAID

Public Health Dpt - Bioinformatics and Applied Genomics Unit – HPI
WHO European Region sequencing laboratories and GISAID EpiCoV group

> Euro Surveill. 2020 Aug;25(32):2001410. doi: 10.2807/1560-7917.ES.2020.25.32.2001410.

Geographical and temporal distribution of SARS-CoV-2 clades in the WHO European Region, January to June 2020

Erik Alm [1], Eeva K Broberg [1], Thomas Connor [2 3], Emma B Hodcroft [4], Andrey B Komissarov [5], Sebastian Maurer-Stroh [6 7 8 9], Angeliki Melidou [1], Richard A Neher [4], Áine O'Toole [10], Dmitriy Pereyaslov [11], WHO European Region sequencing laboratories and GISAID EpiCoV group; WHO European Region sequencing laboratories and GISAID EpiCoV group*

Collaborators, Affiliations + expand

PMID: 32794443 PMCID: PMC7427299 DOI: 10.2807/1560-7917.ES.2020.25.32.2001410

Immunology – Host Response

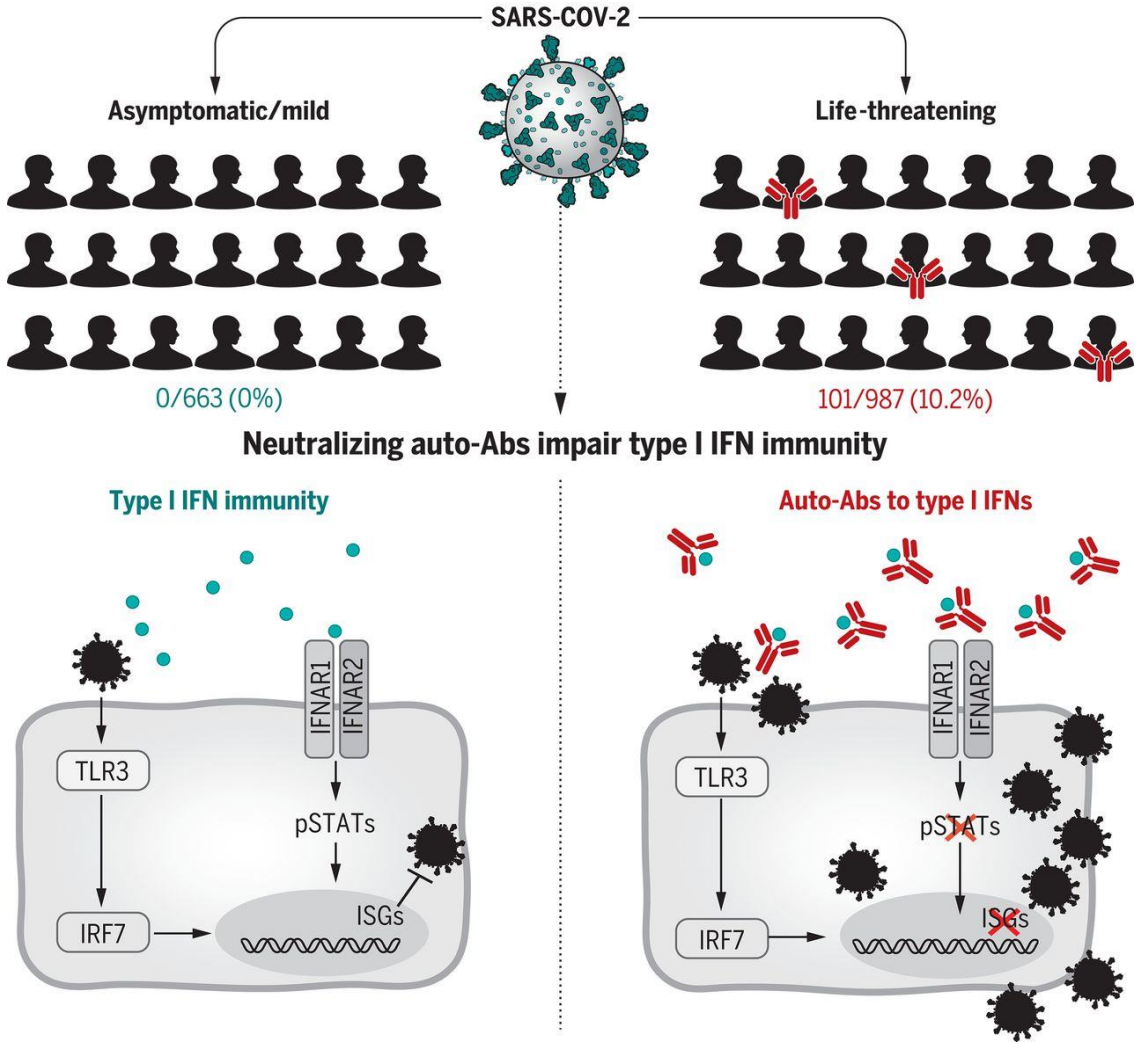
- Detection of autoantibodies against type I IFNs in patients with life-threatening COVID-19
- Profiling of IgA and IgG antibodies against SARS-CoV-2
- Development of SARS-CoV-2 pseudo-capsids to investigate infection profiles and host responses
- Development of immunoassays against SARS-CoV-2 antigens

Detection of autoantibodies against type I IFNs in patients with life-threatening COVID-19

COVID19- HGE
Bioinformatics and Applied Genomics Unit – HPI
In collaboration with “Sotiria” Hospital

› Science. 2020 Oct 23;370(6515):eabd4585. doi: 10.1126/science.abd4585. Epub 2020 Sep 24.

Autoantibodies against type I IFNs in patients with life-threatening COVID-19



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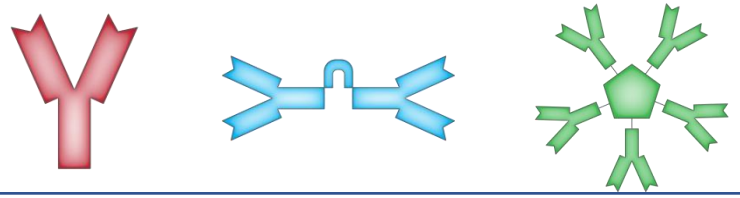
Development of diagnostics immunoassays (ELISA) using four SARS-CoV-2 antigens

Immunology laboratory ΕΙΠ – "Inspired" Facility HPI
In collaboration with **Institute Pasteur Paris**

Antibody testing

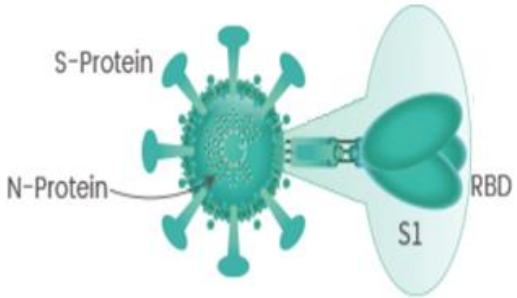
IgG, IgA, IgM

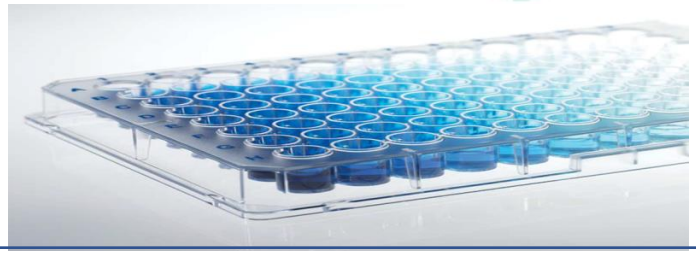


Viral Antigens

Recombinant proteins

Trimeric Spike, Nucleocapsid, S1, RBD





Already developed:

10 immunoassays for anti-SARS-CoV-2 antibody testing

Already identified:

3 human monoclonal antibodies with anti-SARS-CoV-2 activity

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Profiling of IgA and IgG antibodies against SARS-CoV-2

Public Health Dpt - HPI

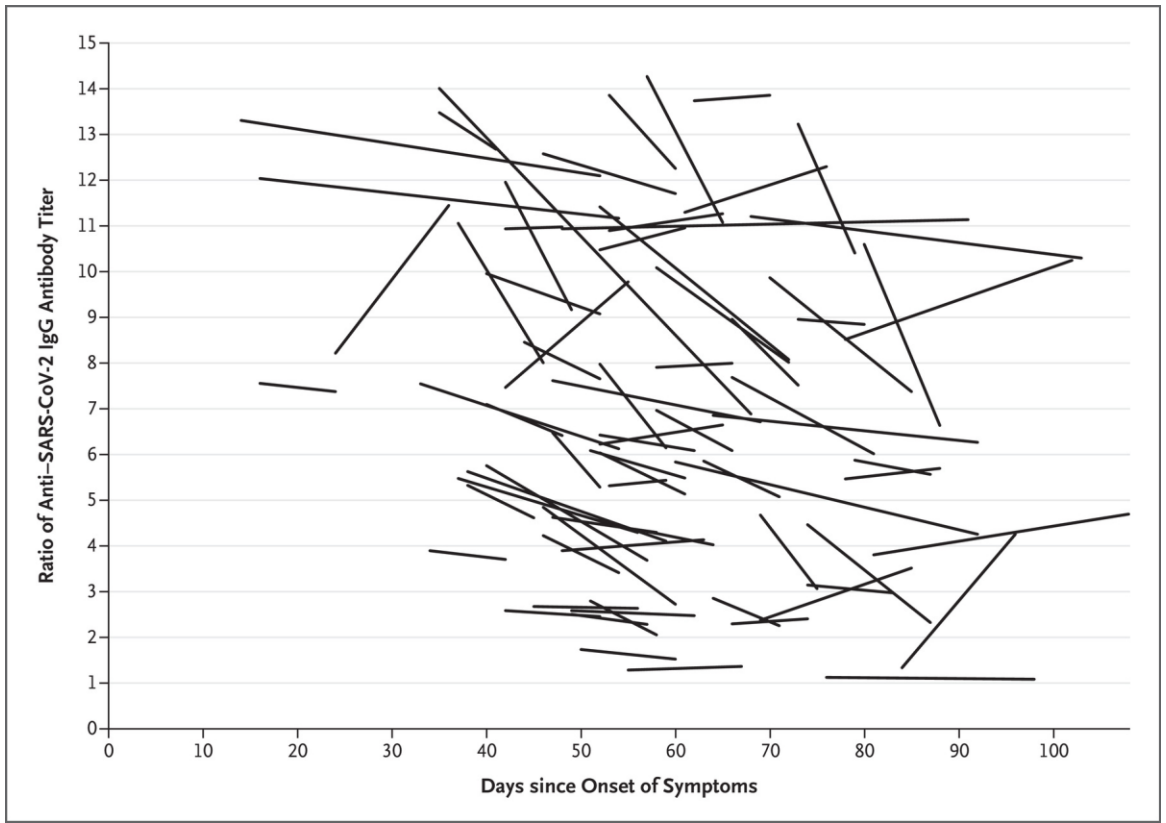
Comment > N Engl J Med. 2020 Oct 22;383(17):1695. doi: 10.1056/NEJMc2027051.
Epub 2020 Sep 23.

Loss of Anti–SARS–CoV–2 Antibodies in Mild Covid–19

Evangelos Terpos [1], Andreas Mentis [2], Meletios A Dimopoulos [3]

Affiliations + expand

PMID: 32966711 DOI: 10.1056/NEJMc2027051



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Host Response

Development of SARS-CoV-2 pseudo-capsids to investigate infection profiles and host responses

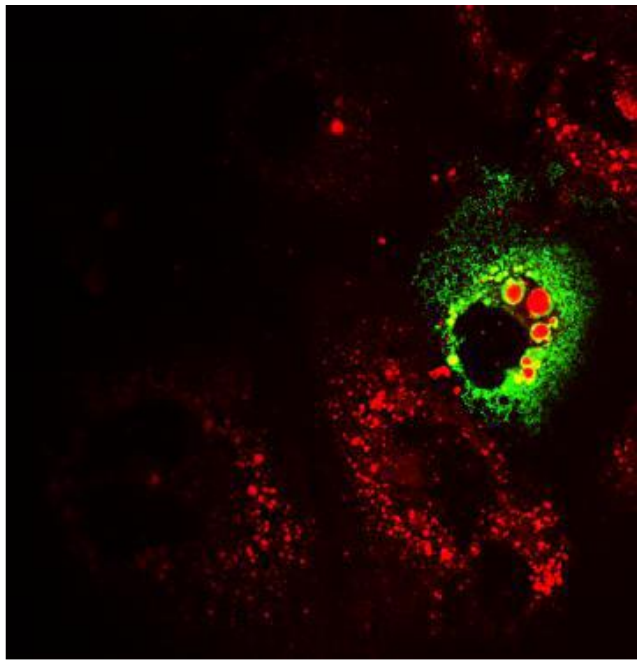
Profiling of miRNAs in COVID19 patients

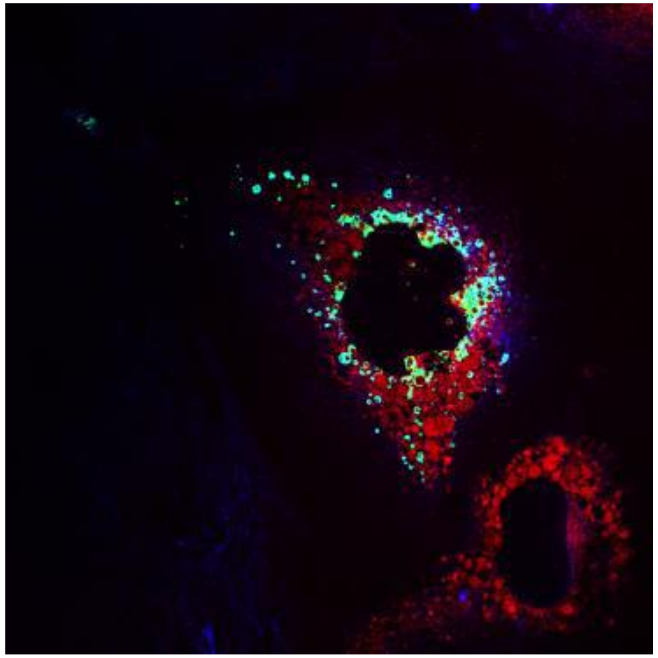
Development of SARS-CoV-2 pseudo-capsids to investigate infection profiles and immunological responses

Molecular Virology Laboratory - HPI

Construction of full and defective SARS-CoV-2 pseudo-capsids for the study of early interactions between the virus and the target cells.

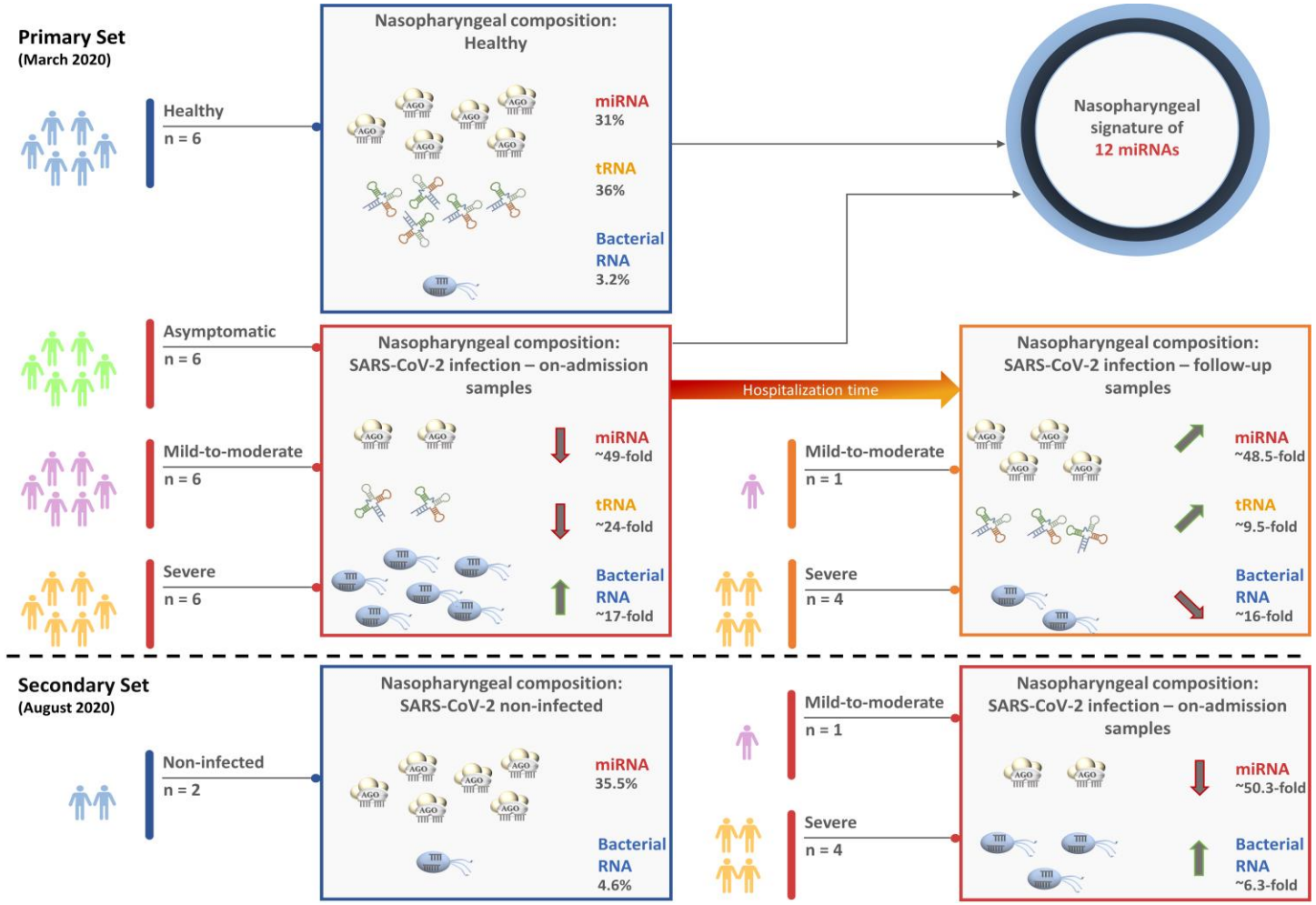
Investigation of immunological responses and potential interactions between capsid proteins and cellular receptors





Profiling of miRNAs in COVID19 patients

DIANA-Lab



Human Genetics

Genetic profiling in patients with life-threatening COVID-19

Genetic profiling in patients with life-threatening COVID-19

COVID19- HGE
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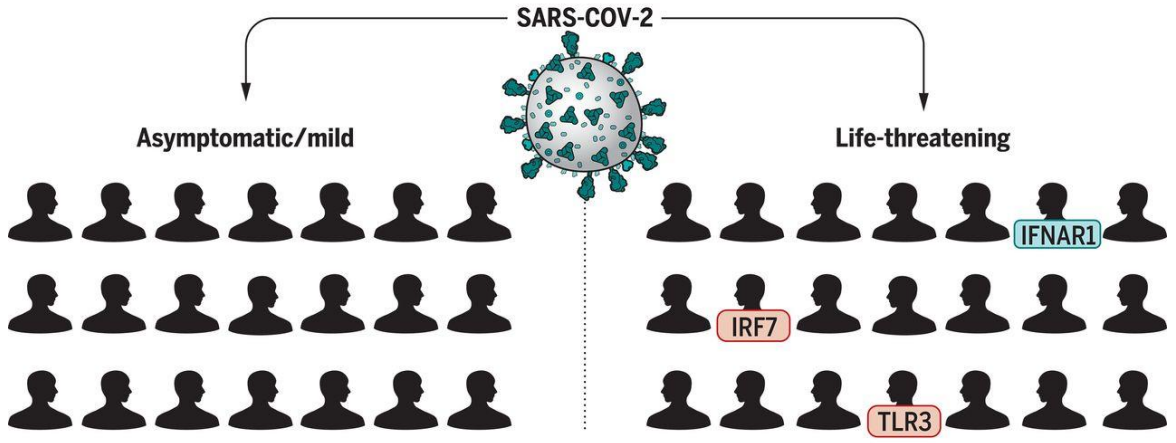
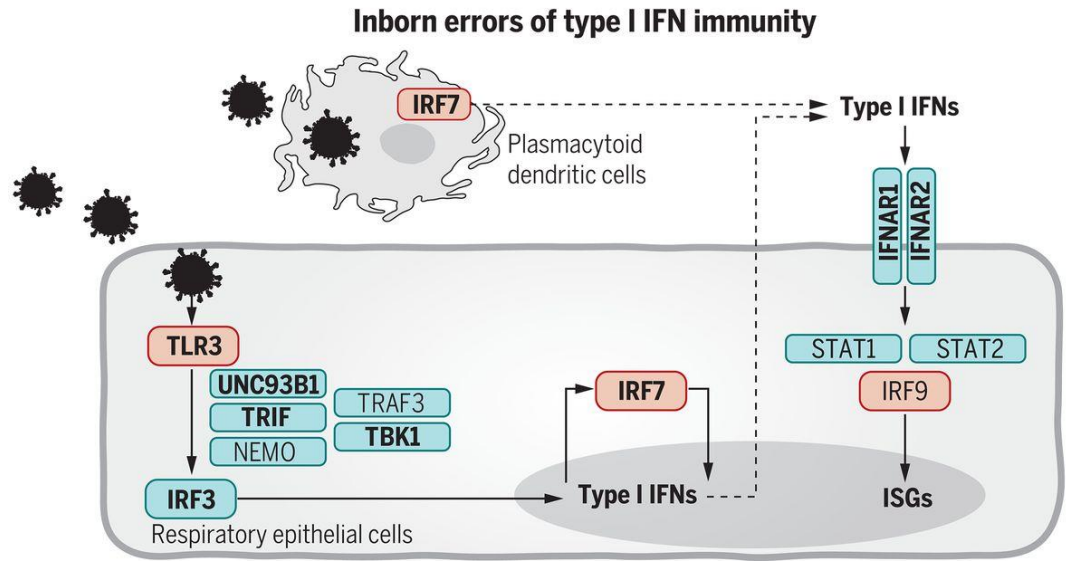
› Science. 2020 Oct 23;370(6515):eabd4570. doi: 10.1126/science.abd4570. Epub 2020 Sep 24.

Inborn errors of type I IFN immunity in patients with life-threatening COVID-19





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Thank you for your attention

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