



12/2022 | CARE Biannual Newsletter  **C A R E**
CORONA ACCELERATED R&D IN EUROPE

CARE: the largest European COVID-19 consortium pushes scientific boundaries to help arm the world against future pandemics.

Do you CARE to join us?

The CARE consortium is a public-private coalition uniting scientists from academia, research centres, SMEs, EFPIA members and IMI Associated Partners in the fight against coronavirus. This multidisciplinary organisation cuts across traditional silos by mixing expertise from 37 different organisations. Despite its size it was mobilised at unprecedented speed and continues to work at pace: delivering new ideas, new methods and new molecules all the time.

With a turnkey Clinical Trial Platform in place to take the best candidates in to the clinic, CARE is open to considering assets from third parties alongside its own. **Read on for more details about the consortium, its collaborative culture and ways you may be able to contribute.**

CARE Key Facts

Ambition to **accelerate effective therapies** to COVID-19 patients in Europe and around the world, and generate a truly transformative treatment regimen



The largest European research initiative addressing the challenges of COVID-19



Coalition of Europe's best scientific minds from 37 globally-renowned research institutions and pharmaceutical companies, together with partners from the USA and China



A multi-disciplinary team with **proven scientific and technical expertise and capabilities** in anti-viral drug development



75.8 million Euro investment over 5 years with a grant from the Innovative Medicines Initiative and contributions from EFPIA partners, IMI Associated Partners and other organisations



Combines a focus on rapid emergency response with focus on **long-term preparedness** for current and future outbreaks



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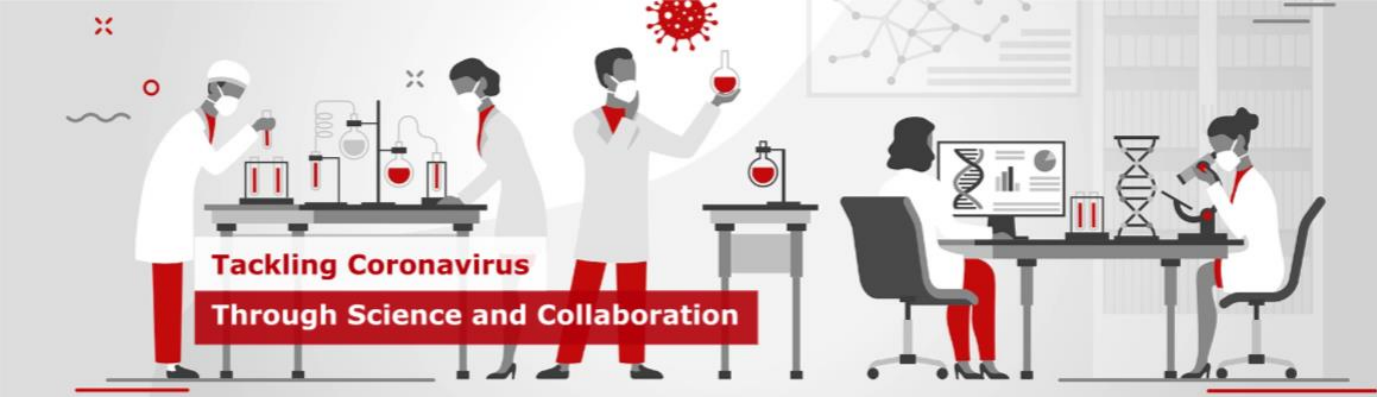
Johnson & Johnson

Takeda



innovative medicines initiative





All about CARE

CARE is one of [8 IMI EC funded consortia](#) playing a role in supporting efforts targeting coronavirus. It was launched in April 2020 and is Europe's largest scientific research initiative committed to tackling COVID-19.



Its dual goals were firstly to find solutions to address the arising emergency; and also for future pandemic preparedness, exploring small molecule and antibody options.

CARE comprises 37 highly respected partners from around the globe, bringing together the relevant academic and industry expertise, with a budget of 76 million euro split between contributing EFPIA partners and matched by the European Commission. It is led by Marnix Van Loock of Johnson & Johnson, with Kumar Singh Saikatendu of Takeda as co-lead, and Professor Yves Lévy of VRI-Inserm as the project co-ordinator.



Project Coordinator: Professor Yves Lévy, Professor of Clinical Immunology and Executive Director, VRI-Inserm

Project Lead: Marnix Van Loock, Senior Scientific Director and R&D Lead of Emerging Pathogens, Global Public Health, J&J



Project Co-lead: Kumar Singh Saikatendu, Senior Director, Head, Lipid Nanoparticle Platform, Takeda

The consortium comprises three research pillars, addressed by eight work packages working independently and collaboratively towards our goals.

	Emergency response	Long-term strategy	
	Pillar 1 Drug repurposing	Pillar 2 Small molecule drug discovery	Pillar 3 Virus-neutralising antibody discovery
Early discovery	WP1: Anti-coronavirus drug discovery in phenotypic virus cell-based assays		
		WP2: Target-based drug discovery and design	
		WP3: Hits to leads	
Late discovery			WP4: Antibody-based immunotherapies
		WP5: System biology	
		WP6: From lead to pre-clinical candidate and proof of concept in animal models	
Clinical development	WP7: Clinical evaluation of repurposed or novel SARS-CoV-2 antivirals or antibodies		
	WP8: Management, governance, communication, dissemination and exploitation		



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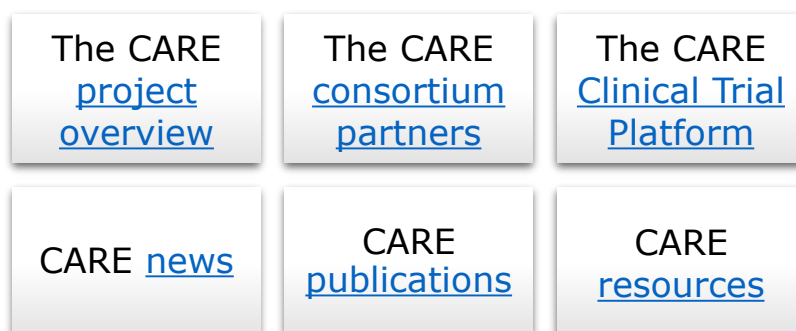
Initial efforts in the emergency space did not yield results, but progress has steadily been made in the preparedness space in both small molecules and antibodies, with teams continually taking account of the evolving context as the virus yields new variants.

The consortium is steadily building a pipeline of potential small molecule assets to move forward, with promising signs of differentiation from current standard of care. On the antibody front, two very promising candidates were developed with good breadth and potency across all currently known variants, which are now being developed in the clinic, outside of CARE.

CARE's ultimate objective is to run two phase 1 and one phase 2 clinical trials; with a bespoke clinical trial platform in readiness for this. The consortium will report on these trials before the project concludes in March 2025. In addition to our own "home grown" pipeline of assets, the consortium is also [open to interest from third parties](#) with molecules that could potentially be developed within CARE and take advantage of what it can offer.

CARE is committed to serve society through science and collaboration. Its partners are dedicated to undertaking efforts to make potential new treatments accessible for broad populations including in low and lower-middle income countries at an affordable price. Naturally, the consortium is keen to focus its remaining resources towards the most promising candidates that will bring new benefit to patients.

More information: Go to the care website for more information about





Below is a sample of publications relating to CARE's contribution in the field of coronavirus. See more [here](#).

Refolding of lid subdomain of SARS-CoV-2 nsp14 upon nsp10 interaction releases exonuclease activity. *Anna Czarna, Jacek Plewska, Leanid Kresik et al. Structure, 2022, 30(8): 1050-1054*

[Read the article](#)

A dual mechanism of action of AT-527 against SARS-CoV-2 polymerase. *Ashleigh Shannon, Véronique Fattorini, Bhawna Sama et al. Nat Commun, 2022, 13:621*

[Read the article](#)

High Throughput cryo-EM epitope mapping of SARS-CoV-2 spike protein antibodies using EPU multigrid. *Ieva Drulyte, Stefan Koester, Dianna Lundberg et al. White paper with ThermoFischer Scientific, 20212*

[Read the article](#)

Patient-derived monoclonal antibody neutralizes SARS-CoV-2 omicron variants and confers full protection in monkeys. *Craig Fenwick, Priscilla Turelli, Dongchun Ni et al. Nature Microbiology, 2022, 7: 1376-1389*

[Read the article](#)

Design, immunogenicity, and efficacy of a pan-sarbecovirus dendritic-cell targeting vaccine. *Séverin Coléon, Aurélie Wiedemann, Mathieu Surénaud et al. EBioMedicine, 2022, 80: 104062*

[Read the article](#)

CD177, a specific marker of neutrophil activation, is a hallmark of COVID-19 severity and death. *Yves Lévy, Aurélie Wiedemann, Boris P. Hejblum et al. iScience, 2021, 24:102711*

[Read the article](#)

Hydroxychloroquine use against SARS-CoV-2 infection in non-human primates. *Pauline Maisonnasse, Jérémie Guedj, Vanessa Contreras et al. Nature, 2020, 585: 584-587*

[Read the article](#)

Are you interested in joining CARE?

As mentioned in the earlier article, CARE is opening its doors to third party organisations who have compounds that could be taken to the next level through leveraging the CARE infrastructure and resources.

Click [here](#) to read more about this opportunity



CARE Collaboration in Action

While for pragmatic reasons, the work of the CARE consortium is separated into discrete work packages (WPs), in reality the WP teams have often come together in order to align on approaches, planning or problem solving. Below is a recent example where Ellen Van Damme, as the EFPIA lead of WP1 has convened representatives from WPs 1, 2, 3 and 5 to explore ongoing collaboration opportunities.



CARE WP1 EFPIA Lead,
Ellen Van Damme, Principle
Scientist at Janssen

In line with the aims of the consortium, to date WP1 has been concentrating effort and expertise on large scale screening and profiling campaigns to deliver high quality hits. In fact, the team has had access to approximately 2 million compounds across different libraries to fulfil this activity.

So, what's next for WP1? As the hit compounds migrate from WP1 through the consortium to other work packages, the team has decided to refocus, leveraging its plethora of assays to deliver additional information about the hit series of interest.

To conceptualize the additional scope of WP1, the team is proactively collaborating with members of work packages 2, 3 and 5, for interactive discussions in the first instance, to generate ideas around including WP1 in target identification. WPs 1, 2 and 3 already work closely together to assess new chemical matter generated by WP3. New potential antivirals are sent to WP1 for testing in cell-based assays to determine antiviral activity. Promising compounds from WP3 are sent to WP2 for target deconvolution in target-based assays.

It was agreed that the primary goal of WP1 from this point is identifying targets of phenotypic hits, and in addition, the identification of druggable targets, for the consortium. In the latter case, the team can use compounds which are currently not part of the main selection to go on a fishing expedition for targets.

This work can bring together the omics approaches in WP5 with the array of assays in WP1. Once interesting targets are identified, we can transfer these targets to WP2 for target-based screening with the aim of finding novel chemical space.



CARE Collaboration in Action (continued)

Why is this important?

The consortium as a whole comprises a vast diversity of knowledge and expertise, which for practical reasons is organised into discrete work packages, each with its own objectives that will enable the consortium to fulfill its obligations in the COVID-19 space. Members of the consortium recognised very early on that there is even greater value to be derived through the collective identification of opportunities and solving of problems, through cross-work package interactions.

This effort by Work Package 1 to consult with three other work packages in the small molecule space is one such example that forges the connections between work packages for even greater benefit: in this case aiming to deliver hits with confirmed druggable targets. Other work packages would also come to the table should hit compounds be approved for pre-clinical and ultimately clinical testing.

CARE in Social Media



More information about CARE can be found through its [LinkedIn](#) page. Or search for **#CAREvsCOVID**. To support us we invite you to take three simple steps

- Follow and connect to [CARE LinkedIn](#) account
- Like, comment or repost CARE posts
- Invite your network to follow, connect, like, comment and repost CARE posts



About this Newsletter

Having reached the project half way point, with many new discoveries and achievements under our belt, we will be sharing our progress each June and December via the newsletter; as well as more frequent posts being shared on LinkedIn

All CARE partners will automatically receive a link to this newsletter. If you would like to be added to the distribution list please email the [CARE Project Management Office](#)

Reminders

This project has received funding from the Innovative Medicines Initiative 2 Joint Undertaking (JU) under grant agreement No 101005077. The JU receives support from the European Union's Horizon 2020 research and innovation programme, EFPIA, BILL & MELINDA GATES FOUNDATION, GLOBAL HEALTH DRUG DISCOVERY INSTITUTE and UNIVERSITY OF DUNDEE.

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In association with:



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