

ANNEX

BRAZILIAN Science, Technology and Innovation (STI) INSTITUTIONS RESEARCH ON COVID-19

(UPDATE 11 JUNE 2020)

CONTESTS AND CALLS FOR RESEARCH PROPOSALS

OXFORD-ASTRAZENECA-MINISTRY OF HEALTH-LEMANN FOUNDATION-UNIFESP: VACCINE TRIALS

With the support of the Ministry of Health, Brazil will take part into the vaccine project being development by Oxford University in partnership with the pharmaceutical company AstraZeneca. Following the United Kingdom, Brazil will be the first country to undertake human trials of the vaccine, as approved by ANVISA, the Brazilian health regulatory agency, on June 2nd. The Federal University of São Paulo (UNIFESP) will be in charge of conducting the trials in the state of São Paulo, with the financing support of the Lemann Foundation. Two thousand volunteers already highly exposed to the virus (such as health professional and other hospital workers), aged 18 to 55 years old and not yet infected with the virus will be recruited. Brazilian scientific human resources and scientific infrastructure were key aspects considered for the choice of the country to host the trials. In case the vaccine is successful, the ongoing partnership might pave the way to the production of the vaccine in Brazil.

MCTIC: EXTRAORDINARY CREDIT

Provisional Act n. 962, enacted on 6 May, has ascribed funds for the Ministry of Science, Technology, Innovation and Communications (MCTIC) to the total amount of BRL 352,8 million (equivalent to USD 73 million). The funds should be directed to research and innovation for tackling COVID-19 in the development of rapid diagnostic tests; low cost ventilators; equipment for labs; clinical trials; and internet coverage for health units throughout the country, including remote areas. BRL 150 million (equivalent to USD 31 million) will be channeled to the innovation funding agency FINEP, which has already launched calls on the amount of BRL 132 million (USD 27.5 million) for three lines of research: ventilators and other health support equipment (BRL 80 million - USD 16.6 million); diagnostic tests and biosensors, reagents and other); diagnostic tests and biosensors and reagents (BRL 35 million - USD 7.3 million); and masks, decontamination, sanitation and sterilization equipment and systems (BRL 17 million - USD 3.5 million). Part of the funds (BRL 45 million - USD 9.3 million) will go to the National Center of Energy and Materials (CNPEM), to be invested in clinical trials; setting up of labs according to biosafety levels NB2 and NB3; upgrading level NB3 laboratories to level NB4; synthetic biology units; creation of centers to develop diagnostic tests; and creation of a unit for screening and repositioning medication for emergent viruses.

IBICT: WEBSITE "SCIENCE IN THE COMBAT OF COVID-19"

MCTIC and the Brazilian Institute for Information on Science and Technology (IBICT) have launched the website "Science in the combat of COVID-19", which gathers together the initiatives of the Brazilian Ministry and its institutes against COVID-19. The webportal is divided into four areas: MCTIC Virus Network; Interactive Infograph; Scientific Universe; and Science at Home. Website: <http://covid19.mctic.gov.br/>.

FAPEMA

The research foundation of the state of Maranhão (FAPEMA) launched an emergency public call on the amount of BRL 1 million (USD 208,000) for projects to be concluded in 12 months in the following areas: prevention, control and management; diagnostic tests; vaccine and treatment; epidemiology and public health.

FAPERJ

The research foundation of the state of Rio de Janeiro (FAPERJ) has already disbursed BRL 2 million (USD 416,000) of the public call for projects against COVID-19 launched in March. The funds were channeled to institutions such as the Oswaldo Cruz Foundation (FIOCRUZ, a public research lab and pharmaceutical plant), for the development of rapid tests, and the Federal University of Rio de Janeiro (UFRJ), for the development of an open source ventilator.

FAPEAM

The research foundation of the state of Amazonas (FAPEAM) launched a public call on the amount of BRL 1.6 million (USD 330,000) for tackling the novel coronavirus in the areas of development of medical supplies and immunologic analyses protocols.

FAPEPI

The research foundation of the state of Piauí (FAPEPI) launched an emergency public call on the amount of BRL 200,000 (USD 41,700) for projects against COVID-19 on low cost diagnostic tests; antiviral products; data for mapping the disease; and guidelines for labor safety as a prevention for COVID-19.

FAPDF-SECTI-FIOCRUZ

The Science, Technology and Innovation Secretariat of the Federal District (SECTI) signed a partnership agreement with the Research Foundation of the Federal District (FAPDF) and Fiocruz Brasilia aimed at developing a telemedicine service in order to reduce waiting lines for patients with COVID-19. BRL 10 million (USD 2.08 million) will be invested in the project.

FAPDF-SECTI: BRASILIA OPEN LAB

The Science, Technology and Innovation Secretariat of the Federal District (SECTI) and the research foundation of the Federal District (FAPDF) will invest BRL 1.2 million (USD 250,000)

in the Project Brasilia Open Lab, aimed at increasing fourfold the production of facial protection equipment, reaching 200 pieces of equipment per day, to be used by personnel on the frontline of the fight against COVID-19.

AEB-SPACE HACKATHON

The Brazilian Space Agency has organized the "Space Hackathon", aimed at finding solutions for the mitigation of the impacts caused by the COVID-19 pandemic with the adoption of space technologies. 27 teams took part into the initiative on three categories: Maker Challenge, Business Plan and Human Values.

UFSCAR: DIAGNOSTIC TESTS

Researchers from the Federal University of São Carlos (UFSCar) have developed a project of a device that detects the novel coronavirus from human saliva. The device has four different sections each with sensors programmed to identify the virus RNA using electrochemiluminescence. The Project has adapted other devices already in use by UFSCAR to detect Alzheimer, cancer, leishmaniasis, Hansen's disease and zika. The same group involved in the project is also undertaking research to detect the virus capsid, which might enable to develop a means to detect it from the air or wastewater.

USP - VENTILATOR HELMET

The University of São Paulo (USP) is developing a non-invasive ventilator shaped as a helmet for patients with COVID-19. It is made of acrylic glass and latex and is adjustable to different patients.

UFRJ - HYPERIMMUNE PLASMA

The Federal University of Rio de Janeiro (UFRJ) started testing a treatment based on plasma containing antibodies developed in horses, similar to treatments for tetanus and rabies.

HOSPITAL EINSTEIN-VARSTATION

The startup company *Varstation*, incubated at Eretz.bio, in the Albert Einstein Hospital, has developed a diagnostic test for the novel coronavirus as precise as the RT-PCR method but capable of processing 1,536 samples. The test has already been patented in the United States. It has adopted the next generation sequencing method for detecting the virus RNA.

Website: <https://varstation.com/en/>

LACTEC-GTI: FEVER SCREENING SYSTEM.

The Institute of Technology for Development (Lactec) and the startup company GTI, both from the state of Paraná, have developed a fever screening system suitable for large areas such as airports and bus stations. The system may be accessed using a smartphone app and will create risk maps based on artificial intelligence.

Website: <https://lactec.org.br/covid-19-lactec-e-startup-gti-desenvolvem-equipamento-de-monitoramento-coletivo/?lang=en>.

PRONTLIFE

The telemedicine company 'Prontlife Health Intelligence', included in its system a self-assessment protocol for the novel coronavirus. Its app for patients may be downloaded from the App Store or Google play. Website: <https://prontlife.com.br/site/> .

GEG BRASIL

Google Educator Brasil created special materials to be used by teachers and schools in order to help with home-schooling. They may be accessed in the *Google Classroom* platform (code 42syyuc).

Geneva, 11 June 2020
