

INNOVATIONS IN COVID-19

Bridging opportunities
at Oswaldo Cruz Institute

CONTROL OF SARS-COV-2 INFLAMMATORY RESPONSE AND REPLICATION BY VIP AND PACAP NEUROPEPTIDES (COD. 2020.019)

COORDINATOR

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RESEARCH AREA

New medicines/drugs

DEVELOPMENT STAGE

Level 1 - TRL - Basic principles observed and reported. MRL - Basic principles observed and reported.

PROPOSITION / APPLICATION

The excessive inflammatory reaction resulting from the SARS-CoV-2 infection, which correlates with high serum levels of proinflammatory cytokines, causes severe tissue damage in patients with COVID-19. Infiltrating monocytes are the main source of these mediators, in addition to being targets of the virus. Therefore, it is essential to identify agents capable of containing SARS-CoV-2 replication and also of regulating the concomitant inflammatory response.

INNOVATION

The neuropeptides VIP and PACAP present evident anti-inflammatory (Abad C et al 2011) and antiviral effects, as already reported (Temerozo JR et al, 2018). As there are no anti-COVID-19 drugs approved for clinical use, there is an urgent need to identify compounds with both activities simultaneously. We believe that VIP and PACAP can meet this condition. Our initial findings reveal that these peptides inhibit the replication of SARS-CoV-2 in human monocytes and dramatically reduce the production of proinflammatory cytokines by infected cells. We will look for the mechanisms that explain our initial findings.

OPPORTUNITY

Provide drugs that combine antiviral and anti-inflammatory effects in a single anti-COVID-19 agent.

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