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Study of the mechanism of viral entry inhibitors and SARS-CoV-2 pseudovirus neutralization assay in the BSL2 laboratory

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During this period of activities, we worked on the generation and characterization of new SARS-Cov-2 pseudotypes for neutralization assays in convalescent plasma and monoclonal antibodies, as well as an inhibition assay for recombinant S proteins, such as ACE2 receptor blockers. This methodology made it possible to carry out serological tests of a vaccine against COVID-19 of a large number of plasma samples in vaccine trials in collaborations. We also performed neutralization assays to characterize the interaction with cells containing the ACE2 receptor protein and the subsequent internalization of the pseudo-virus were performed using UV-C radiation and the photosensitizing action of antibodies complexed with the photosensitizer PDZ. For present and future studies, we produced different pseudotypes of viral particles: basically, one containing the Luciferase-IRES-ZsGreen reporter gene, the other containing only the ZsGreen reporter gene, both containing SARS-Cov-2 envelope spike proteins and a third no spike as a control pseudovirus. (1) The morphological characterizations of the pseudovirus particles were performed by transmission electron microscopy and by DLS (Dynamic Light Scattering). Production and characterization of virus pseudotypes with coronavirus Spike fusion proteins (CoV-2) for BSL2 laboratory assays. (2)

Palavras-chave: SARS-CoV-2. Pseudotiping lentiviral particles. Neutralization assay.

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