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Glycyrrhizinic acid aqueous solutions as potential nanoparticulated formulation in the Inhibition replication of PRRSV on MARC 145 cell culture

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The aim of the research was to study the effect of GA solutions on uninfected and PRRS virus-infected cells in culture. An attempt of testing loaded nanoparticles with GA on cells was explored. The results are of great importance because they represent the first step to establish an option to treat infections by PRRS. Nanoparticles were obtained by the microemulsion method and were characterized by their stability, particle size, Z-potential, morphology and thermal behavior. Once sterilized using UV radiation and filtration, were tested on MARC 145 cells previously infected with virus 101-108 TCID₅₀/ml, at a GA concentration of 0.54 mg/ml. Although GA exhibited a low selectivity index (1.73), it showed inhibition of the replication of PRRS, as was verified by the trypan blue staining and MTT assay. Crance et al., 2003, reported selectivity index values of 6-13 for viruses of the Flaviviridae family. They proved four antivirals, in spite of GA showed a low selectivity index among them, it was a potent inhibitor of all flaviviruses. For SARS-associated coronavirus the selectivity index was >8.33. It is important to point out that selectivity indices of a compound could be moderately influenced by the strain of virus tested.