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Evaluation of oncolytic use of *Rotavirus* Wt1-5 in acute lymphocytic leukemia REH cell line

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Oncolytic viruses are viruses selected to infect and replicate specifically in tumor cells and then decreasing cell viability. Some viruses have been adapted or modified to give them enhanced infectivity and selectivity toward target tumor cells. Oncolytic viruses have become a novel approach for treating some cancers by inducing cell lysis or immune response to tumor cells. In present work, acute lymphocytic leukemia REH cells was infected with adapted Wt1-5 *Rotavirus* previously reported. Infection produced by active oncolytic *Rotavirus* induced expression of cell death signals in cancer cells but not in non-tumor cells. Cell death was characterized using DiOC6/7-AAD, DNA fragmentation test, Annexin V, TUNEL and Caspase assay. We propose that the oncolytic properties of this Wt1-5 *Rotavirus* are derived from the fact that it specifically targets cells expressing heat shock proteins, protein disulfide isomerase and $\alpha V\beta 3$ integrin on their cell surface, which is common in many cancer cells. The interaction of *Rotavirus* and cell surface proteins was evaluated with flow cytometry and confocal microscopy. The results suggest that the Wt1-5 *Rotavirus* tested in the present work has oncolytic properties that allow us to propose that this adapted *Rotavirus* could be assayed as an oncolytic virus in other cancer cells, including leukemia and animal models.

Biography

Rafael A Guerrero R is a Doctor in Medicine with a Master's degree in Biochemistry from the National University of Colombia. He is a current PhD candidate in Biotechnology at the same university. He is also a part time Lecturer of Biochemistry at the Department of Physiological Sciences, School of Medicine, National University of Colombia and at the School of Medicine, Health Science University Foundation. He has published some papers about of *Rotaviruses*.

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