VP2 POTENTIATES THE PROTECCION INDUCED BY VP6 AGAINST THE ROTAVIRUS INFECTION IN A DNA VACCINE MODEL

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Viruses like particles (VLPs) composed of VP2/VP6 are very effective in inducing protection against the rotavirus infection in animal models. Individually, VP6 also can induce protection against the infection; however, there is no information about the immunogenicity of VP2. The aim of this work was to evaluate the efficacy of DNA vaccines that codify for VP2 and VP6 alone or combined to induce protection against the rotavirus infection. Murine rotavirus VP2 and VP6 genes were cloned into the pCDNA-3 vector. Adult BALB/c mice were inoculated 3 times by intramuscular injections with 100 or 200 μg of pCDNA-3_{VP2} and pCDNA-3_{VP6}, alone or combined. Two weeks after the last inoculation, mice were challenged with the murine rotavirus EDIM. We found that both plasmids pCDNA-3_{VP2} and pCDNA-3_{VP6} were able to induce rotavirus-specific serum antibodies, but not intestinal rotavirus-specific IgA. Only pCDNA-3_{VP6} at 200 μg could induce 30 % protection against the infection. Co-administration of 100 μg of pCDNA-3_{VP2} with 100 μg of pCDNA-3_{VP6} induced 35 % protection. When different ratios of pCDNA-3_{VP2}/pCDNA-3_{VP6} were used, it was found that the co-administration of 10 μg pCDNA-3_{VP2}/ 100 μg pCDNA-3_{VP6} gave the best result with up to 55 % protection. These results indicate that the DNA plasmid expressing VP6 is a better vaccine candidate that the one expressing VP2 but co-administration of both plasmids is a good alternative to potentiate the protection induced by VP6, probably by the formation of VLPs VP2/VP6 *in vivo*.