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Preclinical evaluation of the immunogenicity of a new Cuban pneumococcal conjugate vaccine (PCV10) administered concomitantly with Heberpenta®-L vaccine

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Finlay Vaccine Institute is developing a new pneumococcal conjugate vaccine (PCV10-TT) against serotypes 1, 5, 6A, 6B, 9V, 14, 18C, 19A, 19F and 23F of Streptococcus pneumoniae, all of them conjugated to tetanus toxoid. Good immunization practices require concomitance studies of new candidates with currently applied vaccines, in addition of immunogenicity studies. The aim of this work was to evaluate the immunogenicity and possible immunological interferences between the concomitant administrations of PCV10-TT with Heberpenta®-L, a DTwP combined vaccine, in the New Zealand rabbit model. Prevnar-13® was used as a control vaccine to compare vs PCV10-TT candidate. Rabbits were immunized concomitantly with three doses of Heberpenta®-L and Prevnar 13® or PCV10-TT. The IgG antibody responses to all antigens were evaluated by immunoenzymatic assays. PCV10-TT was as immunogenic as Prevnar-13 for common serotypes. No interferences were induced by PCV10-TT on the humoral response against the antigens present in the Heberpenta®-L vaccine ($p>0.05$). The co-administration did not induce a reduction of immune response generated against the pneumococcal polysaccharides contained in PCV10-TT vaccine ($p>0.05$). The concomitant administration of Heberpenta®-L did not induce interference on Prevnar-13® antigens. The PCV10-TT response behaved similar to the Prevnar 13® vaccine when they were applied concomitantly with Heberpenta®-L. The preclinical results suggest that PCV10-TT is as immunogenic as Prevnar-13 for common serotypes, ant it will not interfere with the immune response induced by the licensed Heberpenta-L® vaccine.

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