**VAC-3S, a safe Immunotherapeutic HIV Vaccine decreased total HIV DNA and increased CD4/CD8 ratio: Phase I Final Results.**

**INTRODUCTION**

We have developed an innovative immunotherapy based on a highly specific and conserved motif, called 3S, located in the gp41 HIV-1 Env protein. This highly pathogenic motif induces expression of Nkp44L, the cellular ligand of an activating NK receptor (Nkp44), rendering unfixed CD4+ T cells sensitive to NK lysis.

**METHODS**

IVAC-3S/P1 was a prospective, randomized, placebo-controlled, double-blind, dose-escalation study, to assess safety and immunogenicity of 3S-VAstrix intramuscular administrations (weeks 0, 4, 8, 12, 16, 20 and 24) in 150 HIV patients (231.9, 223.3, 211.1; 208.1, 214.1, 207.1 and 204.1 BMI; 20.9, 19.8, 19.7, 19.6, 19.5, 19.4, 19.3, 19.2, 19.1, 19.0, 18.9, 18.8, 18.7, 18.6, 18.5, 18.4, 18.3, 18.2, 18.1, 18.0, 17.9, 17.8, 17.7, 17.6, 17.5, 17.4, 17.3, 17.2, 17.1, 17.0, 16.9, 16.8, 16.7, 16.6, 16.5, 16.4, 16.3, 16.2, 16.1, 16.0, 15.9, 15.8, 15.7, 15.6, 15.5, 15.4, 15.3, 15.2, 15.1, 15.0, 14.9, 14.8, 14.7, 14.6, 14.5, 14.4, 14.3, 14.2, 14.1, 14.0, 13.9, 13.8, 13.7, 13.6, 13.5, 13.4, 13.3, 13.2, 13.1, 13.0, 12.9, 12.8, 12.7, 12.6, 12.5, 12.4, 12.3, 12.2, 12.1, 12.0, 11.9, 11.8, 11.7, 11.6, 11.5, 11.4, 11.3, 11.2, 11.1, 11.0, 10.9, 10.8, 10.7, 10.6, 10.5, 10.4, 10.3, 10.2, 10.1, 10.0, 9.9, 9.8, 9.7, 9.6, 9.5, 9.4, 9.3, 9.2, 9.1, 9.0, 8.9, 8.8, 8.7, 8.6, 8.5, 8.4, 8.3, 8.2, 8.1, 8.0, 7.9, 7.8, 7.7, 7.6, 7.5, 7.4, 7.3, 7.2, 7.1, 7.0, 6.9, 6.8, 6.7, 6.6, 6.5, 6.4, 6.3, 6.2, 6.1, 6.0, 5.9, 5.8, 5.7, 5.6, 5.5, 5.4, 5.3, 5.2, 5.1, 5.0, 4.9, 4.8, 4.7, 4.6, 4.5, 4.4, 4.3, 4.2, 4.1, 4.0, 3.9, 3.8, 3.7, 3.6, 3.5, 3.4, 3.3, 3.2, 3.1, 3.0, 2.9, 2.8, 2.7, 2.6, 2.5, 2.4, 2.3, 2.2, 2.1, 2.0, 1.9, 1.8, 1.7, 1.6, 1.5, 1.4, 1.3, 1.2, 1.1, 1.0, 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1, 0.0, -0.1, -0.2, -0.3, -0.4, -0.5, -0.6, -0.7, -0.8, -0.9, -1.0

**RESULTS**

**CONCLUSION & PERSPECTIVES**

VAC-3S is a safe and immunogenic HIV immunotherapy at higher tested doses. The induction of anti-3S antibodies was associated with increased CD4/CD8 ratio and decreased total HIV blood reservoir. Post-hoc analyses are being conducted in order to better characterize anti-3S antibody properties as well as virological and immunological effects. Our working hypothesis on the total HIV DNA decrease is a direct effect of anti-3S antibodies on latently infected cells and/or an effect mediated by the immune normalization.

A phase IIa on 90 patients is currently running to confirm safety, immunogenicity and biological effects in patients with CD4 counts between 200 and 500 cells/mm³ (see poster MOPEA038). A combination phase IIb trial with VAC-3S is planned to be launched in the arena of functional cure.