

Anti-HIV activity of antibodies in ultralow doses: Results of *in vitro* experimental studies

Sergey Tarasov¹, Svetlana Sergeeva¹, Oleg Epstein¹ and Jean-Pierre Tafani²

¹OOO "NPF "Materia Medica Holding", Russia

²Pcis S.A., Maison-Alfort, France

The problem of HIV infection treatment is crucial today. Side effects of antiretroviral drugs restrict their long-term use, and HIV resistance requires a combined treatment. Searching for new approaches to HIV treatment, APcis (France) conducted an experimental study of anti-HIV activity of compound containing ultralow doses of antibodies (ULDAb) to IFN γ and ULDAb to CD4 ("the drug"), and its combination with AZT (10 nM). The study was performed on human mononuclear cells and macrophages inoculated with 100 TCID₅₀/10⁵ cells of HIV-1-LAI and HIV-1-Ba-L strains, respectively. Anti-HIV activity was assessed based on inhibition of p24 protein concentration and reverse transcriptase (RT) activity.

It was shown that the drug administered once 24 hours prior to mononuclear cells inoculation leading to 100% infection or repeatedly during three weeks after macrophage inoculation leading to 80% infection, inhibits HIV replication, thus reducing p24 protein concentration and RT activity (vs. control) by 95% and 85% in mononuclears and by 75% and 78% in macrophages, respectively. The combined use of the drug with AZT allow to increase anti-HIV activity of AZT from 67% to 92% in mononuclears after 7 days and 82% to 90% in macrophages after 17 days while showing no cellular toxicity.

Therefore, the performed *in vitro* study showed anti-HIV activity of the drug containing ULDAb to IFN γ and ULDAb to CD4, as well as an eventual effective use of AZT in lower doses, thus evidencing potentially increased efficacy and safety of combined antiretroviral therapy due to inclusion of the drug containing ULDAb.

Biography

Dr. Sergey Tarasov graduated from Russian Medical University and received MSc degree in biomedical sciences. His master's dissertation was devoted to the treatment of common pediatric viral infections. He is head of R&D analytical department of Russian pharmaceutical company Materia Medica and specialized in research and development of antiviral agents based on ultralow doses of antibodies. He has published 12 papers listed in MEDLINE database and participated in the International scientific conferences such as International Congress of Pediatrics 2007 (Greece), EPHAR 2008 (UK), Europaediatrics 2009 (Russia), ECCMID 2010 (Vienna) etc.