

In addition to the coding sequences, the human genome contains a so noncoding DNA, among which we count transposable elements capable of transposition in the genome. The remnants of the past retrovirus infections – endogenous retroviruses (human endogenous retroviruses – HERVs) belong to the transposable elements, which contain the LTR sequences. Human endogenous retroviruses make up to 8% of the size of the human genome. The retroviruses are not only passive relicts, but they have gained some key functions - too. They increase the plasticity of the human genome and some HERV LTRs can serve as binding sites for transcription factors like. Env protein from the families HERV-W and HERV-FRD were coopted by the human genome and are nowadays expressed as proteins Syncitin-1 and Syncitin-2, which are necessary by the forming of human placenta. Unfortunately, the HERV elements can have a negative health impacts. In the last decades they are subject of a debate in connection with various diseases, such as multiple sclerosis, schizophrenia, HIV proliferation and some types of tumorigenesis. The role of HERVs in the human genome is not completely known yet and it is important to continue with their research.