ABSTRACT

The invention relates to a novel TAL effector nuclease (TALEN) for targeted knockout of the HIV co-receptor CCR5. One aspect of the invention therefore provides a TAL effector nuclease pair comprising a first and a second TAL effector nuclease monomer, wherein each TAL effector nuclease monomer comprises an endonuclease domain having type II endonuclease activity and a TAL effector DNA binding domain having a plurality of repeat units, each comprising a variable amino acid pair RVD, and wherein
a) the TAL effector DNA binding domain of the first TAL effector nuclease monomer binds to the target sequence GCTGGTCATCCTCATCCTG (SEQ ID NO: 1) and/or comprises the RVD sequence NH HD NG NH NH NG HD NI NG HD HD NG HD NI NG HD HD NG NN, and
b) the TAL effector DNA binding domain of the second TAL effector nuclease monomer binds to the target sequence AGATGTCAGTCATGCTCTT (SEQ ID NO: 2) and/or comprises the RVD sequence NI NN NI NG NN NG HD NI NH NG HD NI NG NH HD NG HD NG NG.