

Non viral delivery system of PEI/DNA complex using LK15-r3.45 peptides

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Polyethylenimine(branched PEI 25kDa) has been known as an efficient vector and widely used for non viral delivery because it is highest cationic polymer. R3.45 peptide is derived from AAVr3.45 (associated-*adeno virus r3.45*) that is obtained through library and directed evolution. AAVr3.45 has showed the great transfection efficiency into human neural stem cell. Although non-viral delivery is safer than viral delivery, its transfection efficiency is lower than viral delivery. In this study, r3.45 is synthesized LK 15 peptide that is investigated to improve the transfection efficiency in attachment of TAT peptide. In this study, DNA, PEI, LK15-r3.45 is formed complex and then, compare with GFP expression transfection into 3T3, panc 1, PC 12 cell. These material is formed the complexes easily and the enhanced transfection ability of PEI-DNA-LK15-r3.45 compared to PEI-DNA is likely to be due mainly to the higher transfection efficiency. In case of transfection into three type of cell line, PEI-DNA/LK15-R3.45 on N/P ratio (PEI nitrogen / DNA phosphate group) 6 is higher than PEI/DNA complex then, it appears that GFP expression is increased depend on amount of LK15-r3.45 peptides