An improved method for the rescue of of recombinant Newcastle disease virus

ABSTRACT

Reverse genetics has been used to generate recombinant Newcastle disease virus with enhanced immunogenic properties for vaccine development. The system, which involves co-transfecting the viral antigenomic plasmid with three helper plasmids into a T7 RNA polymerase-expressing cell to produce viral progenies, poses a great challenge. We have modified the standard transfection method to improve the transfection efficiency of the plasmids, resulting in a higher titer of virus progeny production. Two transfection reagents (i.e., lipofectamine and polyethylenimine) were used to compare the transfection efficiency of the four plasmids. The virus progenies produced were quantitated with flow cytometry analysis of the infectious virus unit. The modified transfection method increased the titer of virus progenies compared with that of the standard transfection method.

Keyword: Newcastle disease virus; Polyethylenimine; Reverse genetics; Transfection; Virus titration