Title: RECOMBINANT MEASLES AIK-C STRAIN EXPRESSING CURRENT WILD-TYPE HEMAGGLUTININ PROTEIN

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We constructed a recombinant measles virus cDNA, pIC-MVAIK-H/87-K, in which the hemagglutinin (H) gene of the AIK-C vaccine strain was replaced by the wild-type (Mvi/Tokyo.JPN/87-K: genotype D3) H gene and the remaining genes were the same as the AIK-C vaccine strain. To investigate the feasibility of the recombinant vaccine strain expressing wild-type H protein instead of the AIK-C H protein, we constructed two recombinant measles cDNA, having Leu (small plaque-type) and Phe (large plaque-type) at position 278 of the F protein. Infectious chimeric virus strains, MVAIK-H/87-K/S (small plaque-type) and MVAIK-H/87-K/L (large plaque-type), were recovered, which were designed to induce small (S) and large (L) plaques in Vero cells. The MVAIK-H/87-K/S and MVAIK-H/87-K/L did not grow at 39-40°C, similar to the original AIK-C strain, and retained the temperature sensitivity (ts) characteristics. They did not induce cytopathic effect (CPE) in Vero cells but produced CPE in B95a cells, similar to the current wild-type measles Mvi/Tokyo.JPN/87-K. From the results of Western blotting, the mobility of the H protein of MVAIK-H/87-K/S and MVAIK-H/87-K/L was similar to that of Mvi/Tokyo.JPN/87-K. Hyper-immune sera raised by MVAIK-H/87-K/S neutralized all types of current wild strains. Thus, the chimeric measles virus expressing the current wild H protein demonstrated wild-type H properties with ts characteristics of the vaccine strain, indicating that the construction strategy of recombinant measles virus can cope with the hyper-mutated measles virus.