

COMPARISON OF NEURAMINIDASE ACTIVITY OF INFLUENZA A VIRUS SUBTYPE H5N1 AND H1N1 USING REVERSE GENETICS VIRUS

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Abstract. Neuraminidase (NA) is an envelope surface glycoprotein of influenza A viruses. It cleaves α -(2,3) or α -(2,6) glycosidic linkage between a terminal sialic acid residue of the host cell receptor and hemagglutinin of the viral envelope, thus releasing viral progeny from the infected cell. In this study, a reassortant virus (H1N1-NA-H5N1) containing the NA gene from A/duck/Phitsanulok/NIAH6-5-0001/2007 (H5N1) virus and seven remaining genetic segments from A/Puerto Rico/8/1934 (H1N1) was constructed using reverse genetic technique. NA activity of H1N1-NA-H5N1 virus was lower than that of A/Puerto Rico/8/1934 (H1N1), and NA activity of A/duck/Phitsanulok/NIAH6-5-0001/2007 study (H5N1) was the lowest among them ($p < 0.05$). To our knowledge, this is the first comparative study of NA activity of H1N1 and H5N1 virus using reverse genetic technique. It also indicates that the NA gene may be expressed at a higher level in the H1N1 infected cell than the H5N1 infected cell.

Key words: influenza A virus, H5N1, H1N1, neuraminidase, reverse genetic technique

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