Analysis of Transmission Route of MERS Coronavirus Using Decision Tree and Apriori Algorithm

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***Abstract*— Middle East Respiratory Syndrome, which is a respiratory disease caused by MERS coronavirus, is known to be a endemic disease spread in Kingdom of Saudi Arabia, or KSA. On May 20, 2015, it has massively occurred in Republic of Korea, with 186 confirmed cases, 36 deaths. In this paper, we analyzed some features of MERS-CoV's transmission route by a new molecular approach. We have collected DNA sequences of MERS-CoV from 15 different regions in the world, including some regions of KSA. We have converted the DNA sequences into amino acid sequences and used Apriori and Decision Tree Algorithm to found the similarities and differences between different MERS-CoVs' amino acid sequences. Then, we drew some conclusions about MERS's transmission routes by using these results.**

Keywords—Middle East Respiratory Syndrome, MERS, Apriori, Decision Tree Algorithm, transmission route, epidemiological investigation

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