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Construction for minimal positive conditions for the safety of brain from vaccines to be supplied quickly at widespread epidemics

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The most realistic way before the recent epidemic that occurred in unexpected times and places in the world is rapid supplying of vaccines related with the infectious diseases within limited times. However, little considerations about rapid supplying a precise protocol for the safety assurance of brain were established well so far. Thus, this carelessness in the development of general and/or emergent vaccines should be corrected with a certain safety protocol which can reduce risks on brain damages before distribution. Hereby, the present study is undertaken to establish a manual of certain materials that can make brain damage such as breaking down blood-brain barrier (BBB) protecting brain. Since BBB is critical morphological structure selective permeability between blood vessels and brain, it would be very important to know which conditions (i.e. post-injection time) can make BBB vulnerable by pyrogenic inflammatory agent such as lipopolysaccharide (LPS) systemic injection. Following IP administration of the LPS to the mice, the mRNA levels of typical markers of the damaged BBB tight junction were checked out. As conditions in the LPS, IV via tail vein of mice, Evans blue administration after IP LPS administration according to each concentration (four conditions of concentration) of LPS concentrations. BBB damages could be measured by Evans blue existence checks by fluorescence wavelength. In addition, we could observe the mutual relations by comparison with the methods. Ultimately, we could observe the mutual relations by comparison with the two methods (mRNA and wavelength levels). According to the results, we set LPS concentration can open BBB and by the mRNA levels of tight junction; we can apply these results to general/emergency vaccine strategy.

Biography

Sun Shin Yi has completed his PhD from Seoul National University, Republic of Korea. He did his Post-doctoral studies from Marquette University, USA. Currently, he is a Professor in the Department of Biomedical Laboratory Science, an Associate Dean of Special Affairs for Planning, and Chair of IACUC at the Soonchunhyang University. He has published more than 60 papers in reputed journals, and a Board Member of Korea Mouse Phenotype Center (KMPC)

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