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Abstract

Several studies regarding the signal transduction pathways have been focused on the lipid raft components in recent years with remarkable advances. To accomplish further and sustained growth of the applications in this field, novel concept in lipid raft studies should be needed. Herein, we propose a cell membrane lipid raft-resident molecules as the antigens for antibody medicine, and a potential target for molecular targeted strategy. Molecular groups were detected using previously developed method, termed as Enzyme-Mediated Activation of Radical Source (EMARS), to label the proximal components to the given cell membrane molecule under physiological condition. EMARS analysis regarding lung cancer cells identified some lipid raft molecules, which are consist of over ten membrane molecules commonly expressed in mouse primary lung cancer cells, human lung squamous cell carcinoma cells. Moreover, it is assumed that EMARS method using living cancer tissue may be necessary in the future. To elucidate whether the detection of lipid raft molecules using EMARS was applicable for the living tissues, mouse living brain tissues were prepared and treated with EMARS probes followed by the EAMRS reaction. The results indicated that EMARS reaction was similarly effective in living tissues as well as in the culture cells. For the development of the antibodies against lipid raft molecules in cancer cells, the hybridoma against lipid raft molecules was generated.

References

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