【別紙２】

論文名：DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 3, X-linked is an immunogenic target of cancer stem cells

新潟大学大学院医歯学総合研究科
氏名　古塩　純

Accumulating evidence suggests that most solid malignancies consist of heterogeneous tumor cells and that a relatively small subpopulation, which shares biological features with stem cells, survives through potentially lethal stresses such as chemotherapy and radiation treatment. Since the survival of this subpopulation of cancer stem cells (CSC) plays a critical role in recurrence, it must be eradicated in order to cure cancer. We previously reported that vaccination with CD133(+) murine melanoma cells exhibiting biological CSC features induced CSC-specific effector T cells. These were capable of eradicating CD133(+) tumor cells in vivo, thereby curing the parental tumor. In the current study, we indicated that DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 3, X-linked (DDX3X) is an immunogenic protein preferentially expressed in CD133(+) tumor cells. Vaccination with DDX3X primed specific T cells, resulting in protective and therapeutic antitumor immunity. The DDX3X-primed CD4(+) T cells produced CD133(+) tumor-specific IFNγ and IL-17 and mediated potent antitumor therapeutic efficacy. DDX3X is expressed in various human cancer cells, including lung, colon, and breast cancer cells. These results suggest that anti-DDX3X immunotherapy is a promising treatment option in efforts to eradicate CSC in the clinical setting.