VACUOLATING CYTOTOXIN A (VacA) OF HELICOBACTER PYLORI BINDS TO MULTIMERIN1.
K. Satoh1, T. Hirayama2, M. Ohta3, S. Tamura3, Y. Ozaki2
1Division of Laboratory Medicine, University of Yamanashi Hospital, Japan, 2Department of Bacteriology, Institute of Tropical Medicine, Nagasaki University, Japan, 3Clinical and Laboratory Medicine, University of Yamanashi, Japan

Immune thrombocytopenia purpura (ITP) is a frequent complication with H. pylori (HP) infection in Japan. The prevalence of HP infection on ITP patients was 21.6% to 90.6%. While the mechanism by which H. pylori induces thrombocytopenia remains largely undetermined, there are several lines of evidence to suggest that its infection activates platelets. In this paper, we investigated the role of vacuolating toxin A (VacA) in inducing platelet activation. VacA did not induce platelet aggregation. However, VacA increased the expression of CD62P upon interaction with platelets. Previously reported that VacA reacted with its receptors (EGFR, RPTPα, RPTPβ, etc). However, we were not able to detect the binding between VacA and each of these receptors. We therefore analyzed VacA binding proteins obtained through VacA affinity chromatography, using MALDI-TOF-MS. As a result, multimerin 1 (MMRN1) was detected in two consecutive experiments, as the binding protein for VacA. A GST-fusion protein of MMRN1 corresponding to the 291AA~391AA peptide sequence reacted with VacA assessed by a Biacore system. We synthesized the 20-AA-length peptides, which partly overlap with one another, and checked the binding of VacA with the dot blot method. As a result, the peptide sequence corresponding to 321AA~340AA showed the highest reactivity to VacA. In conclusion, we found that VacA binds MMRN1, and that MMRN1 binding site for VacA appears to reside within the 321AA~340 AA sequence. However, how this translates into VacA-induced platelet activation remains an issue.