報告番号	※　　第　　号

主　論　文　の　要　旨

論文題目　The innate immune response against RNA viruses in bat cell lines
（コウモリ細胞株における RNA ウイルスに対する自然免疫応答）

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論　文　内　容　の　要　旨

Bats are potential natural hosts of Encephalomyocarditis virus (EMCV), Japanese encephalitis virus (JEV), and Pteropine orthoreovirus (PRV). Bats appear to have some unique features in their innate immune system that can inhibit viral replication causing limited clinical symptoms. Here, kidney epithelial cell lines derived from four bat species (*Pteropus dasymallus*, *Rousettus leschenaultii*, *Rhinolophus ferrumequinum*, and *Miniopterus fuliginosus*) and two non-bat species (*Homo sapiens* and *Mesocricetus auratus*) were infected with EMCV, JEV, and PRV. The viral replication was lower in the bat cell lines derived from *R. leschenaultii*, *R. ferrumequinum*, and *M. fuliginosus* with a higher expression level of pattern recognition receptors (PRRs) and interferon-beta (IFN-β) than that in the non-bat cell lines and a bat cell line derived from *P. dasymallus*. The knockdown of TLR3, RIG-I, and MDA5 in Rhinolophus bat cell line using antisense RNA oligonucleotide led to decreased IFN-β expression and increased viral replication. These results suggest that TLR3, RIG-I, and MDA5 are important for antiviral response against EMCV, JEV, and PRV in Rhinolophus bats.