IS-022
Efficacy of real time monitoring for motility in porcine small intestinal transplantation

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Purpose
In order to obtain the successful result of small intestinal transplantation (SIT), it is important to detect the rejection as early as possible and perform adequate treatment. However, the method for detecting the rejection on real time has not still been established.

Methods
Orthotropic SIT was performed in 24 pigs with immunosuppression using FK-506 (0.05-0.1 mg/kg/day). The interdigestive motor patterns were evaluated using strain gauge transducers (SG), which were fixed on the serosal surfaces of the intestines. They were divided into two groups: Functional group (FG) and Rejection group (R) in which data were recorded within 10 days before the death due to rejection. Seven pigs without SIT were treated as the Controls (C). MMC was analyzed using the following parameters: duration, amplitude, and interval.

Results
There was no significant difference in amplitude and interval between FG and C, while the duration was shorter in FG than C. In contrast, all parameters in R were significantly lower than those in C, suggesting that the motility in R was impaired by rejection.

Conclusions
The SG method could monitor the real time motility of graft and is considered to be efficient for detecting the rejection of SIT.