

**Result of Figure S3; Deficiency of PPs did not influence on ability of OVA uptake in intestinal epithelial cells.**

A deficiency of PPs potentially could affect antigen uptake by the intestinal epithelial cells. To examine the influence of PPs deficiency on OVA uptake in OVA23-3 mice, we compared serum OVA concentrations between PP<sup>-</sup> and normal OVA23-3 mice after oral injection of OVA. OVA uptake (the concentration of each sample after 15, 30, 60 and 120 min from the injection) in OVA23-3 mice fed the CN diet was not influenced by PP deficiency (Figure S3, left). In contrast, the serum concentration of OVA in normal OVA23-3 mice on day 3 of feeding the EW diet tended to be lower than that of EW-fed PP<sup>-</sup> OVA23-3 mice at 15 and 30 min after the injection of OVA ( $P < 0.1$ ) and was significantly lower ( $P < 0.05$ ) at 60 min (Figure S3, right). These results indicate that the delay of inflammatory responses observed in EW-fed PP<sup>-</sup> OVA23-3 mice was not caused by a lack of OVA uptake through M cells present in PPs. OVA uptake did not differ between normal and PP<sup>-</sup> mice, a finding that is substantiated by a report stating that soluble antigen was mainly transported through epithelial cells [6]. In addition, these results regarding OVA uptake in both CN-fed normal and PP<sup>-</sup> mice confirmed treatment female BALB/c mice with anti-IL-7R $\alpha$  mAb on gestational day 14.5 did not affect the epithelial integrity of the offspring. The earlier onset of inflammatory responses in the epithelial cells of OVA23-3 mice fed with EW for 3 days may have induced the significant decrease of OVA uptake.