# Supplementary Data

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Supplementary Figure 1. Macroscopic and microscopic findings in each group (NC, negative control; PC, positive control of ovalbumin-injected mice with allergic rhinitis; MY ICL, mice that underwent intral cervical lymphatic administration of *Metagonimus yokogawai* total protein). (A) Significant hair loss on nose was found in PC group compared to NC or MY ICL groups. (B and C) Toluene blue and Giemsa stain were performed for measuring Mast cells and eosinophils. Infiltration of numerous mast cells in the submucosa of nasal skin and eosinophils in the nasal mucosa were reduced in MY ICL group.

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## Supplementary Figure 2. Analysis of the effects of intra-cervical lymph nodal administrations of *Metagonimus yokogawai*-extracted protein on the cervical lymph nodal expression of mRNAs encoding Th1, Th2 and Th17 cell-related cytokines and of Th1, Th2, Th17, and Treg cell-specific transcription factors using real-time PCR. The relative mRNA expression levels of IL-4 and GATA-3, IL-10 and Foxp3, IFN-γ and T-bet, IL-17 and RORγt were demonstrated according to the study groups.



## Supplementary Figure 3. Analysis of the effects of intra-cervical lymph nodal administrations of *Metagonimus yokogawai*-extracted protein on the splenic expression of mRNAs encoding Th1, Th2 and Th17 cell-related cytokines and of Th1, Th2, Th17, and Treg cell-specific transcription factors using real-time PCR. The relative mRNA expression levels of IL-4 and GATA-3, IL-10 and Foxp3, IFN-γ and T-bet, IL-17 and RORγt were demonstrated according to the study groups.