**Supplemental figure legends**

**Figure S1.** Protocol used to generate and genotype (**A**) the *Wls* mutant allele, and (**B**) *wls*-null mice. (**C**) mRNA levels for *Wls* in wild-type (*Wls+/+*), heterozygous (*Wlsfx/+*), and *wls*-null (*wlsfx/fx*) BMDCs. (**D** and **E**) The percentage of CD40 and CD86 BMDCs with wild-type, heterozygous, and *wls*-null genotypes. (**F and I**) The mean fluorescence intensity (MFI) of MHC class I and MHC class II, and the percentage of CD80+ and CD86+ BMDCs from *Wls* wild-type (*Wls+/+*) and *wls*-null (*wlsfx/fx*) BMDCs with LPS or vehicle control stimulation. (**J**) Relative expression levels of mRNAs for MHC I, MHC II, *CD80* and *CD86* in *Wls* wild-type (*Wls+/+*) and *wls*-null (*wlsfx/fx*) BMDCs with LPS or vehicle control stimulation. (**K** and **L**) following stimulation with *M. tuberculosis* or vehicle control; *a*, *p*<0.001 and n ≥ 8.(**M**) The levels of proliferation rate, measured by the level of BrdU incorporation, in the cocultures of DCs and varying numbers of CD4+ T cells. (**N**) Membrane potential in DCs were detected by cationic JC-1 staining as a functional marker.

**Figure S2.** mRNA levels of in A549 cells transfected with wild-type or WLS mutants. (**A-E**) mRNA levels of total *XBP1*, spliced *XBP1*, *HSPA5/GRP7*8, *DDIT3/CHOP* and *PPP1R15A/GADD34* in A549 cells transfected with wild-type or WLS mutants; (**F**) confocal microscopic imaging of the interaction between WLS and ERN1/IRE1 in A549 cells transfected with wild-type or WLS ΔCT mutants. WLS, green; ERN1/IRE1, red, and nuclei, blue. (**G**) Western blot analysis of autophagic markers (LC3A-I and -II; ATG5, ATG12, and ATG16L1) in A549 cells transfected with wild-type or WLS mutants

**Figure S3.** The mouse model of EAE and ovalbumin (OVA)-induced pulmonary. (**A**) Schematic diagram illustrating the protocol used to induce EAE. (**B** and **C**) Flow cytometric analysis of CNS cells, including neutrophils and macrophages in wild-type and DC-specific *wls*-null mice after EAE treatment (*p* < 0.001; n ≥ 8). (**D**) Schematic representation of the protocol for OVA-induced pulmonary allergic inflammation in mice; (**E** and **F**) total number of inflammatory cells and cell differentials in BALFs after OVA challenge (*p* < 0.001; n.s., not significant).

**Figure S4.** Relative expression levels of proteins in lysates of wild-type and *wls*-null BMDCs. (**A** and **B**) Relative expression levels of protein in lysates of wild-type and *wls*-null BMDCs were calculated from the intensities of the respective bands shown in Figure 1D. (**C**) Relative expression levels of protein in lysates of wild-type and *wls*-null BMDCs were calculated from the intensities of the respective bands shown in Figure 2A.