**Supplementary Figure S1.** Ultrastructure of epithelial basement membrane in DM, DM-ISO, and non-DM rats. Images were taken using a transmission electron microscope (JEM1010, JEOL Inc., Japan) at 3,000x (A-C), 40,000x (D-F), 100,000x (G-I) magnification to compare the ultrastructure of epithelial basement membrane in DM (A, D, G), DM-ISO (B, E, H), and non-DM rats (C, F, I). All groups showed no difference in cellular morphology and polarity of epithelial layer (A-C). DM and DM-ISO rats showed patchy loss of hemidesmosomes in epithelial basement membrane (black arrows in G, H) was observed, whereas non-DM rats showed regular arrangement of hemidesmosomes. (Scale bars = 2 μm in A-C, 200 nm in D-F, 100 nm in G-I)