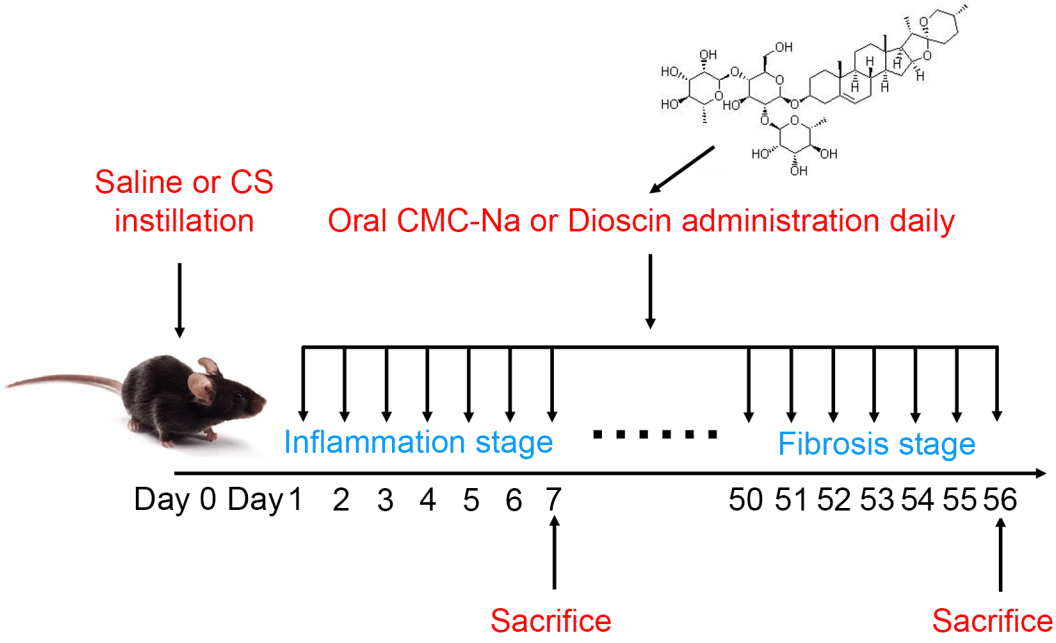

Figure S1. Method of administration. dioscin (80 mg/kg body weight) or vehicle (CMC-Na) was orally administered to C57BL/6 mice every day after saline or CS injection (n=10 per group).

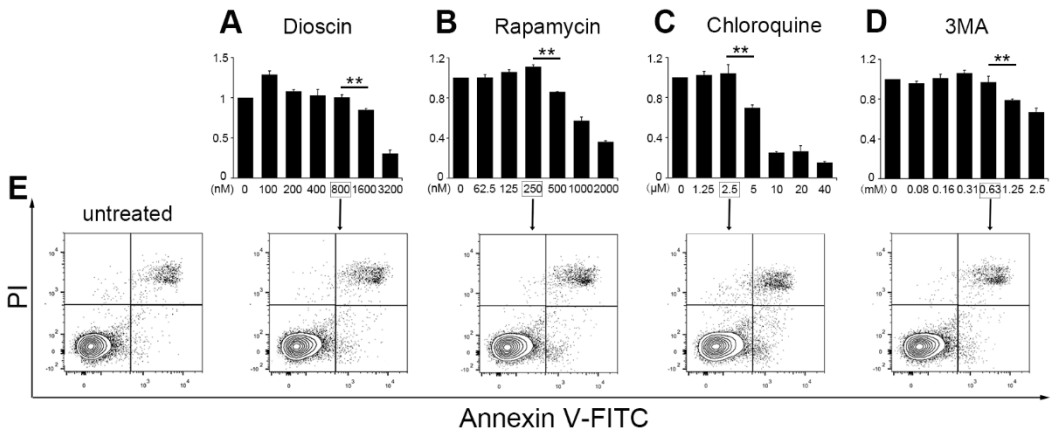

Figure S2. **Effects of chemicals on cell viability.** (**A**) MTT assay of dioscin-treated cells. (**B**) MTT assay of Rapamycin-treated cells. (**C**) MTT assay of Chloroquine-treated cells. (D) MTT assay of 3MA-treated cells. (E) Apoptosis assay of drugs used in experiment. *, $P<0.05$; **, $P<0.01$. Error

bars indicate mean ± SEM. All experiments were repeated three times.

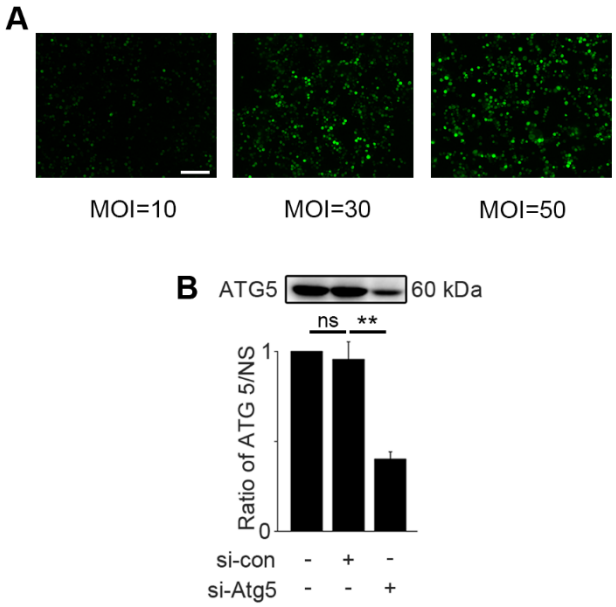

Figure S3. Transfection efficiency of lentivirus with Atg5 siRNA sequence. (**A**) Multiplicity of Infection (MOI) gradient of mRFP-GFP-LC3 lentivirus infecting MH-S cells at 24 hours post infection, scale bar indicates 100 μm. (**B**) Transfection efficiency was tested by measuring ATG5 by immunoblot assay (n=3). *, $P<0.05$; **, $P<0.01$. Error bars indicate mean ± SEM. All experiments were repeated three times.

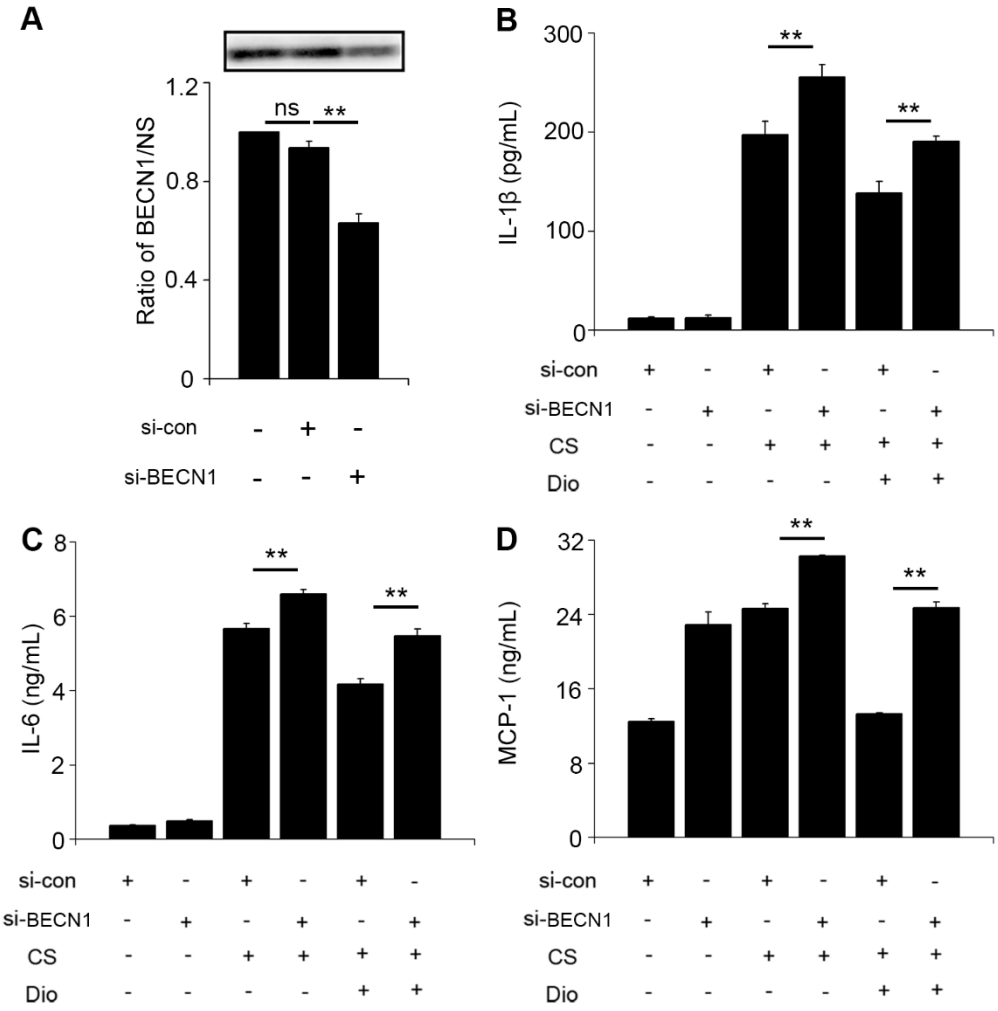

Figure S4. BECN1 knockdown could affect function of dioscin. (**A**)Transfection efficiency was tested by measuring Becn1 by immunoblot assay (n=3) (**B-D**) ELISA analysis of IL-1β, IL-6, and MCP-1 in MH-S cell supernatant (n=3). (**B-G**). *, *P*<0.05; **, *P*<0.01. Error bars indicate mean ± SEM. All experiments were repeated three times with similar results.

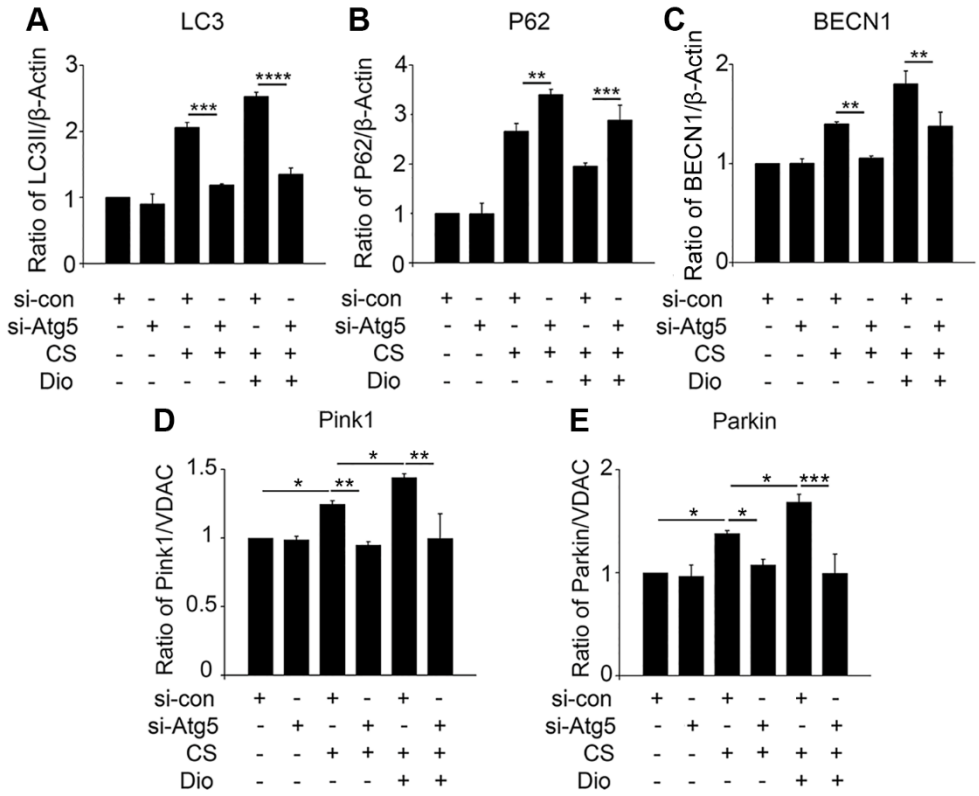

Figure S5. **Quantification of autophagy and mitophagy protein.** (**A**) Quantification of LC3II. (**B**) Quantification of P62. (**C**) Quantification of BECN1. (**D**) Quantification of Pink1. (**E**) Quantification of Parkin. *, *P*<0.05; **, *P*<0.01; ***, *P*<0.001, ****, *P*<0.0001. Error bars indicate mean ± SEM. All experiments were repeated three times.

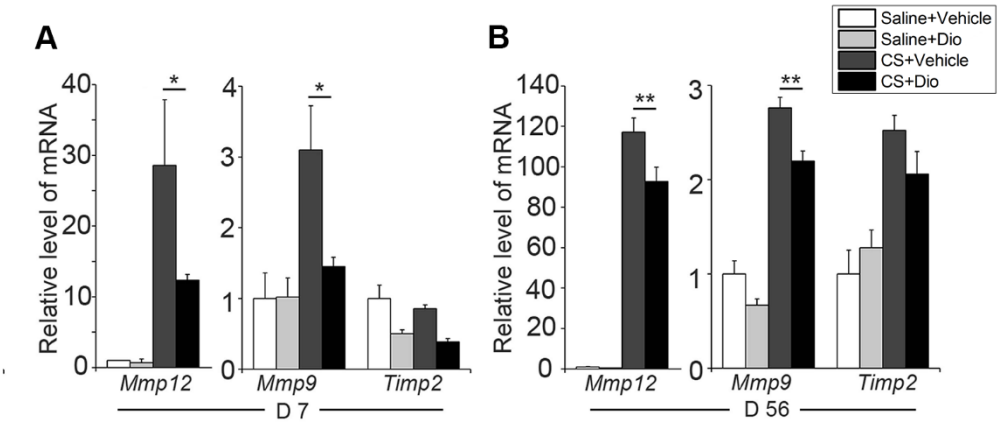

Figure S6. Dioscin treatment reduced the production of MMPs and TIMP

in gene level. (**A**) mRNA level of *Mmp12*, *Mmp9*, and *Timp2* in lung tissue at day 7 (n=5). (**B**) mRNA level of *Mmp12*, *Mmp9*, and *Timp2* in lung tissue at day 56 (n=5). *, $P<0.05$; **, $P<0.01$. Error bars indicate mean ± SEM. All experiments were repeated three times.

Table S1. Primer sequences for qPCR in this study.

Gene	Forward (5'-3')	Reverse (5'-3')
BECN1	ATGGAGGGGTCTAAGGCGTC	TCCTCTCCTGAGTTAGCCTCT
P62	AGGATGGGGACTTGGTTGC	TCACAGATCACATTGGGGTGC
Atg5	TGTGCTTCGAGATGTGTGGTT	GTCAAATAGCTGACTCTTGGCAA
Atg7	GTTCGCCCCCTTTAATAGTGC	TGAACTCCAACGTCAAGCGG
ULK1	TGGAGGTGGCCGTCAAATG	CGCATAGTGTGCAGGTAGTC
Mmp9	CTGGACAGCCAGACACTAAAG	CTCGCGGCAAGTCTTCAGAG
Mmp12	CTGCTCCCATGAATGACAGTG	AGTTGCTTCTAGCCCAAAGAAC
Il-1b	GCAACTGTTCCTGAACTCAACT	ATCTTTTGGGGTCCGTCAACT
Mcp-1	TTAAAAACCTGGATCGGAACCAA	GCATTAGCTTCAGATTTACGGGT
Il-6	TAGTCCTTCCTACCCCAATTTCC	TTGGTCCTTAGGCCACTCCCTTC
Col1a1	GCTCCTCTTAGGGGCCACT	CCACGTCTCACCATTGGGG
Col3a1	CTGTAACATGGAAACTGGGGAAA	CCATAGCTGAACTGAAAACCACC