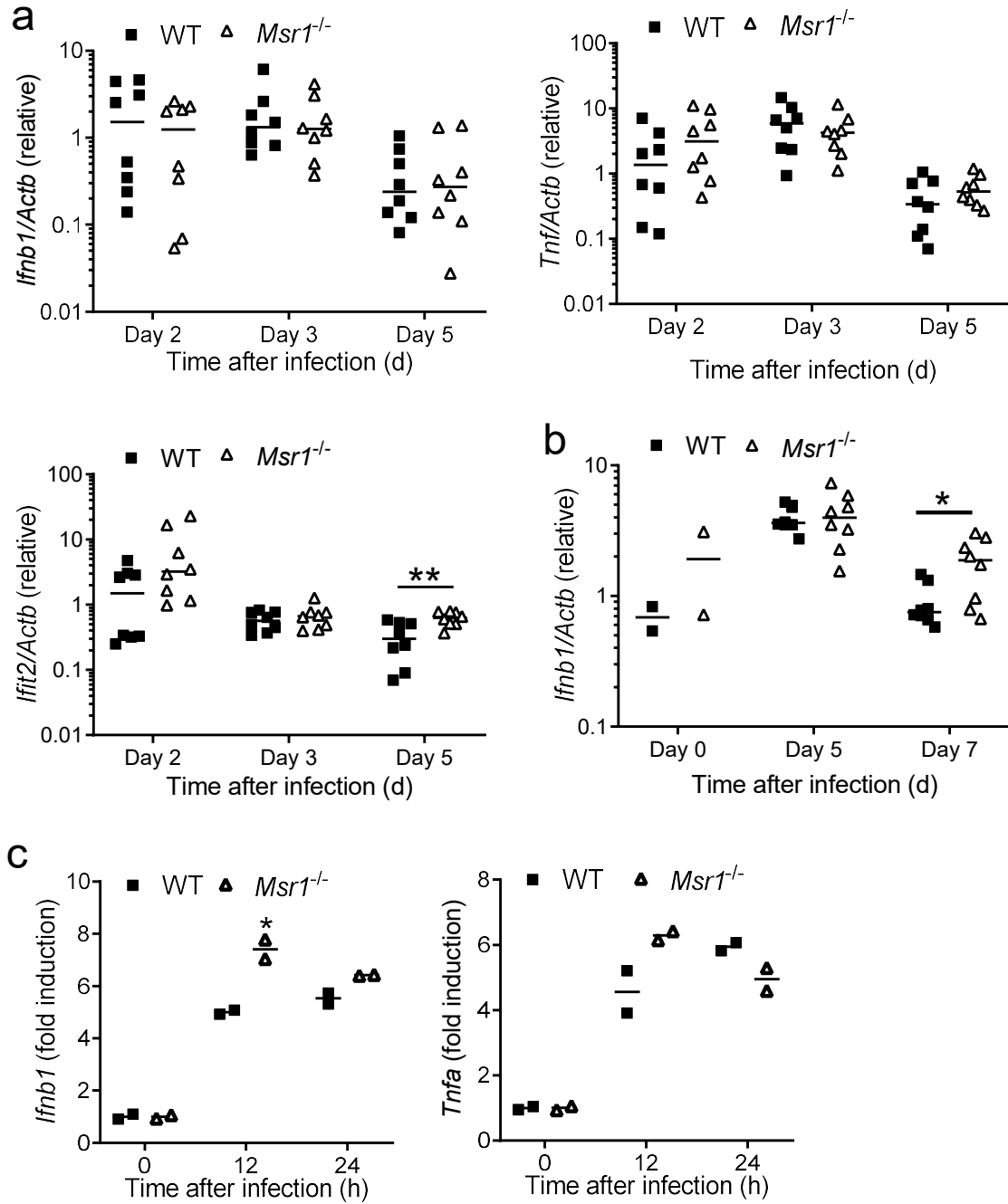


Macrophage scavenger receptor 1 controls Chikungunya virus infection through autophagy in mice

Long Yang, Tingting Geng, Guang Yang, Jinzhu Ma, Leilei Wang, Harshada Ketkhar, Duomeng Yang, Tao Lin, Jesse Hwang, Shu Zhu, Yanlin Wang, Jianfeng Dai, Fuping You, Gong Cheng, Antony Vella, Richard. A Flavell, Erol Fikrig, Penghua Wang

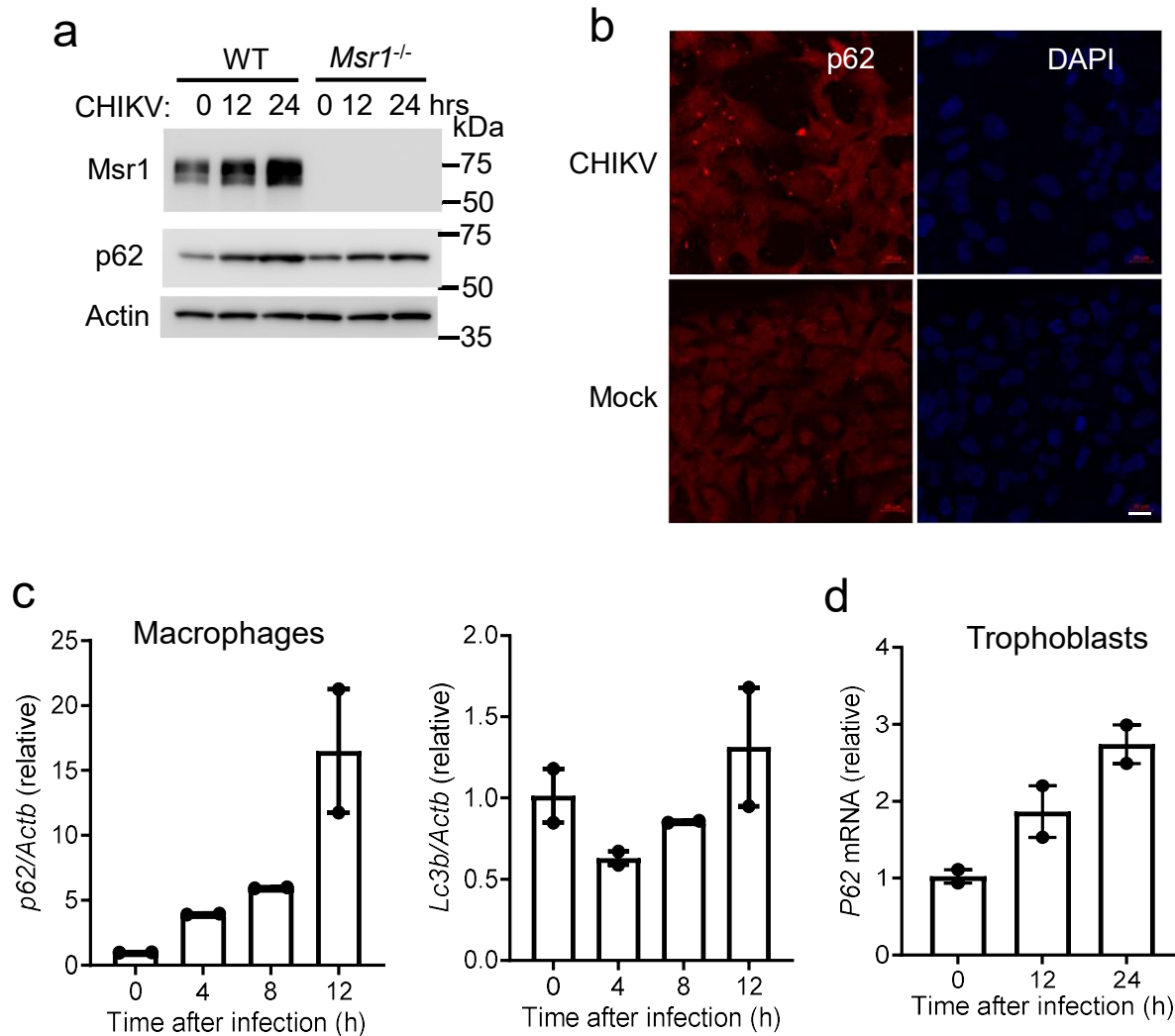
This Supplementary Information contains Supplementary Figs.1- 3 and
Supplementary Table 1.

Supplementary Fig.1



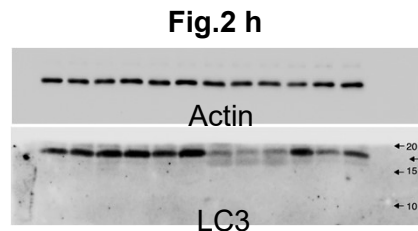
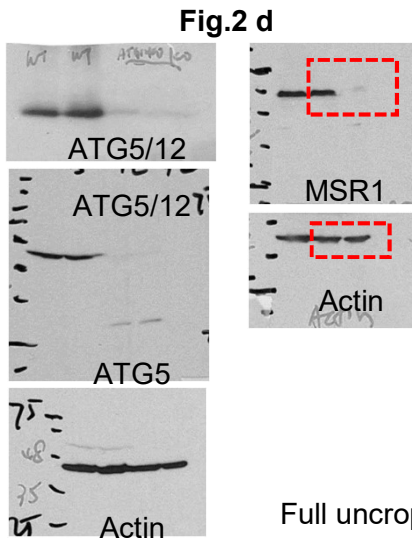
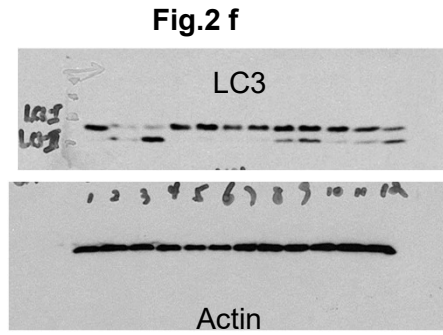
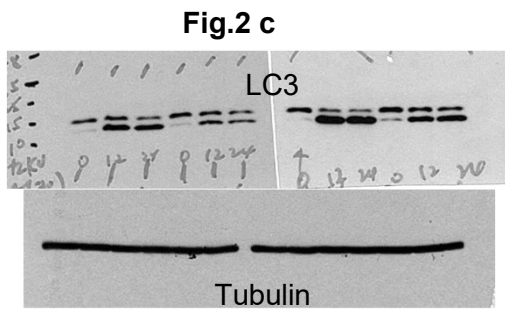
Supplementary Fig.1 MSR1 is dispensable for CHIKV-induced type I IFN response. **a, b** 8 weeks old, sex-matched, C57BL/6 (WT) and *Msr1* deficient (*Msr1*^{-/-}) mice were infected with CHIKV. Quantitative RT-PCR analyses of selected immune gene expression in **a**) whole blood cells and **b**) the ankle joints. *, P<0.05, **, P<0.01 (non-parametric Mann-Whitney U test). **c**) Quantitative RT-PCR analyses of the select immune genes in primary bone marrow-derived macrophages infected with CHIKV at a multiplicity of infection (MOI) of 10. N=2. *, P<0.05 (two-way ANOVA). Each dot represents one mouse/biological repeat; the small horizontal line indicates the median of the result. The data are representative of two independent experiments.

Supplementary Fig.2

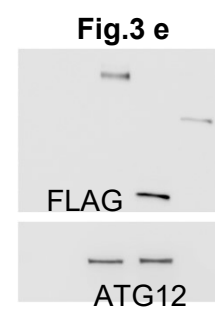
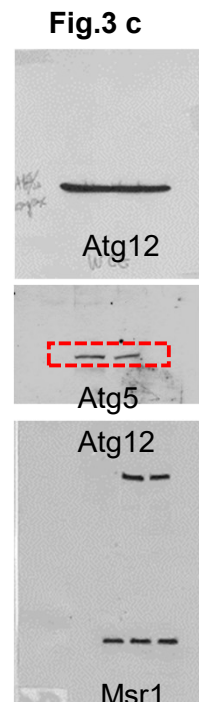
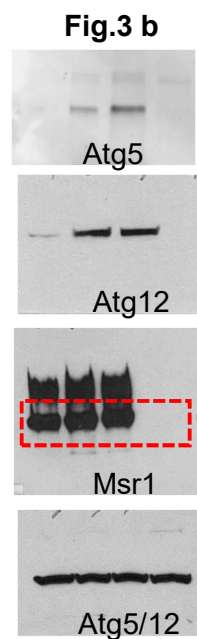
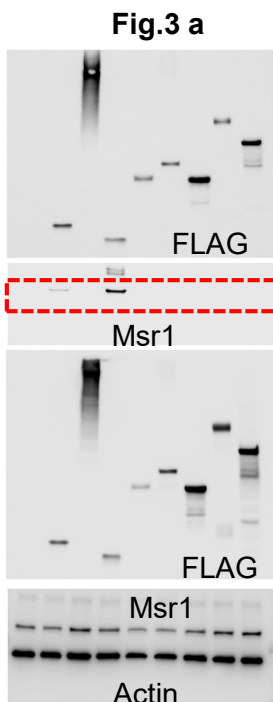


Supplementary Fig.2 P62 expression is inducible by CHIKV. **a**) Immunoblots showing p62 levels in primary bone marrow derived mouse macrophages (BMDM) at various times after CHIKV at a multiplicity of infection (MOI) of 10. **b**) Microscopic images of immunofluorescent staining for P62 in trophoblasts without (mock) /with CHIKV at a MOI of 0.5 for 12hrs. P62 was stained by a rabbit antibody, followed by an Alexa Fluor-594 (red) conjugated secondary antibody. The cells were counterstained for nuclei by DAPI (blue). The images were acquired using a Zeiss LSM 880 confocal microscope (400x). Scale bar: 20 μ m. Quantitative RT-PCR analyses of **c**) *p62* and *Lc3b* mRNA in BMDMs infected with CHIKV (MOI=10), **d**) *P62* mRNA in human trophoblasts infected with CHIKV (MOI=0.5). Bars: mean + s.e.m, n=2.

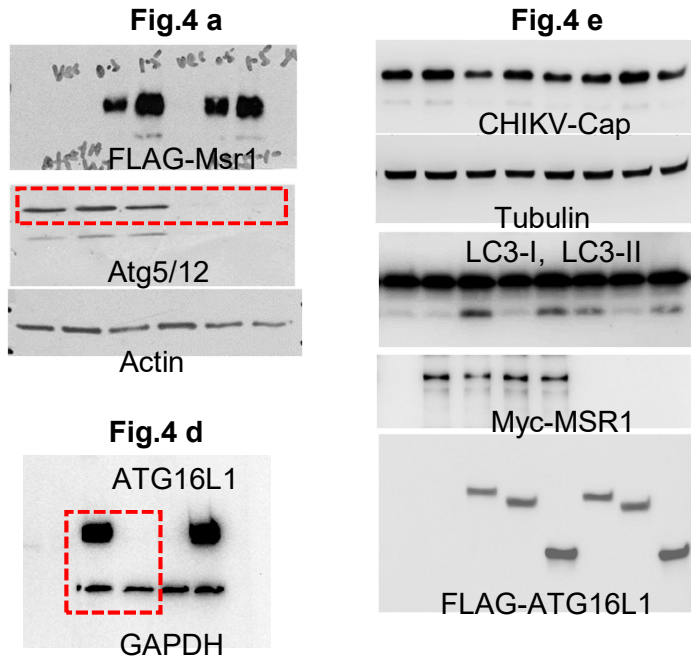
Supplementary Fig.3



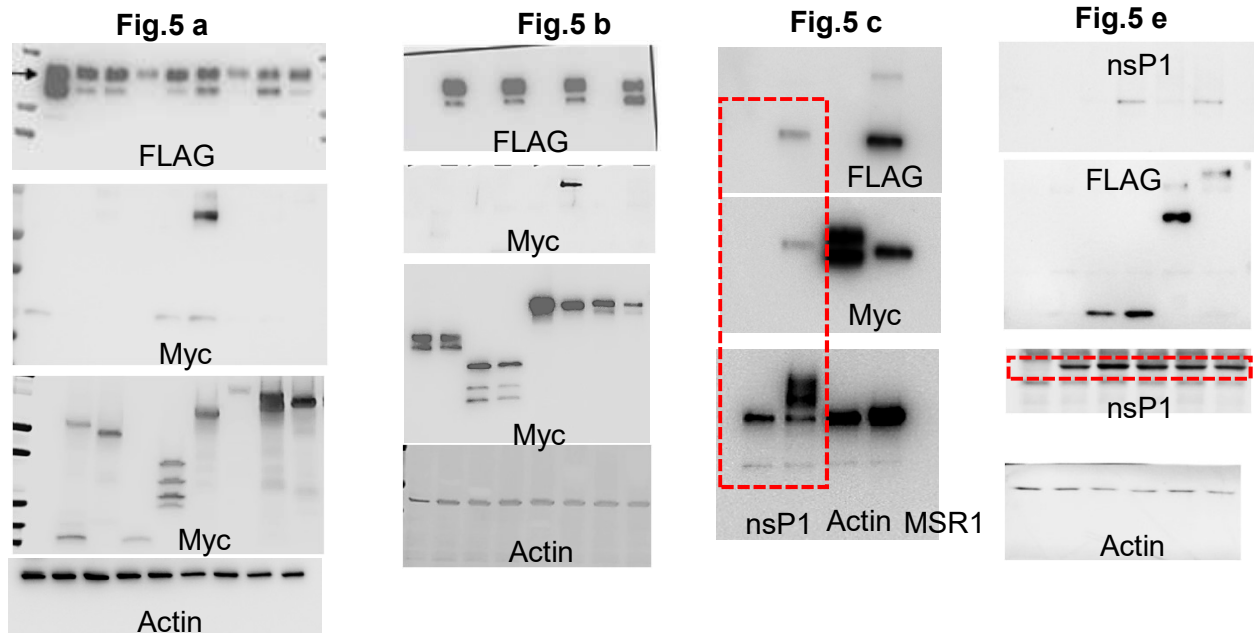
Full uncropped immunoblot images from Fig.2



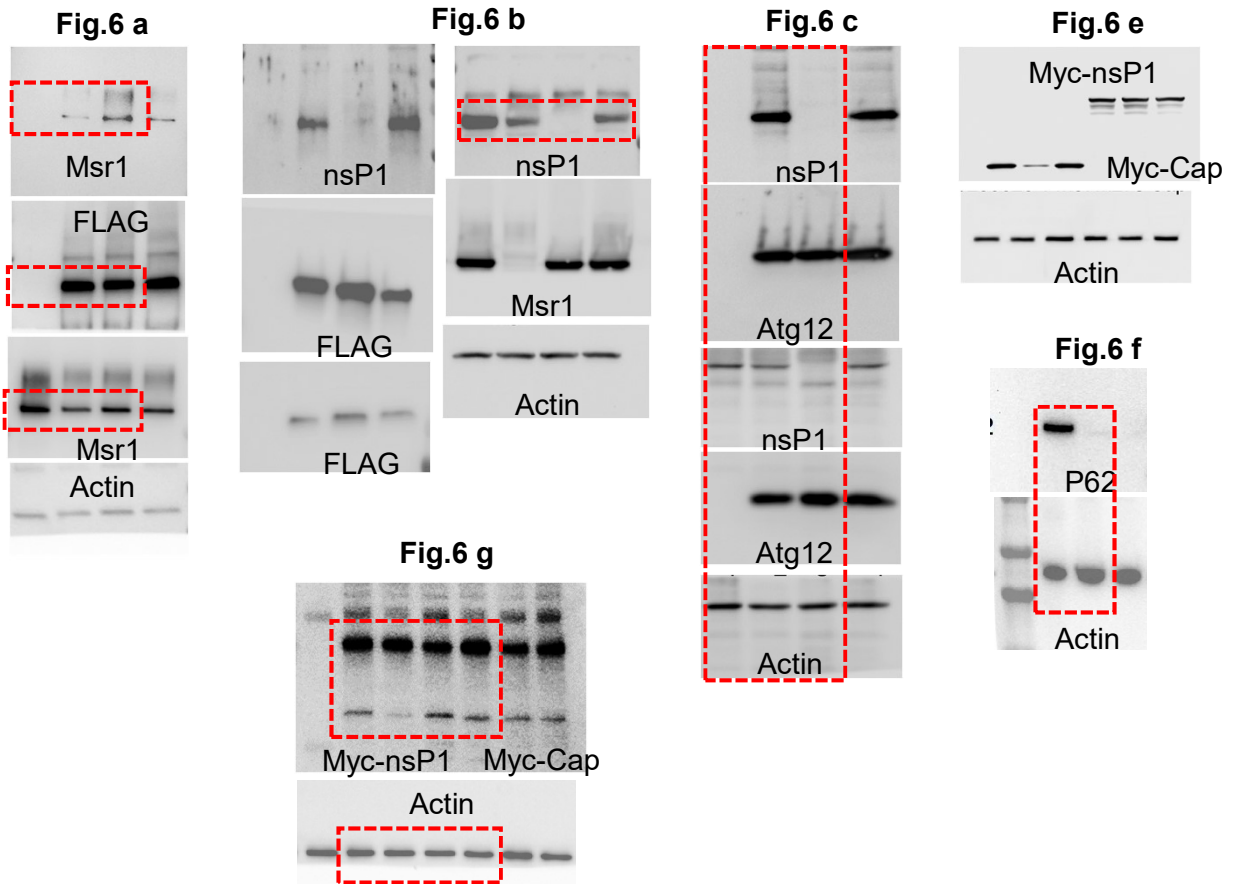
Full uncropped immunoblot images from Fig.3



Full uncropped immunoblot images from Fig.4

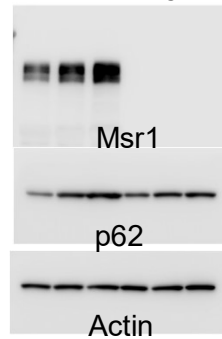


Full uncropped immunoblot images from Fig.5



Full uncropped immunoblot images from Fig.6

Supplementary Fig.2 a



Full uncropped immunoblot images from Supplementary Fig.2

Supplementary Fig.3 Full uncropped immunoblot images from main and supplementary figures.

Supplementary Table 1

| Gene symbol | Species | Forward primer (5'-3') | Reverse primer (5'-3') | Remark |
|---|---------|------------------------------|-------------------------------|--|
| Primers for qPCR | | | | |
| <i>MSR1</i> | Hs | TGCACAAGGCAGCTCAC TTTGG | GTGCAAGTGACTCCAG CATCTTC | |
| <i>Msr1</i> | Mm | AGTGCTGTCTTCTTTAC CAGC | GTGAGGAAGGGATGCT GTA | |
| <i>nsP2</i> | CHIKV | GGCAGTGGTCCCAGATA ATTCAAG | GCTGTCTAGATCCACC CCATACATG | |
| <i>Lc3b</i> | Mm | GTCCTGGACAAGACCAA GTTCC | CCATTCACCAGGAGGA AGAAGG | |
| <i>Sqstm1/p62</i> | Mm | GCTCTTCGGAAGTCAGC AAACC | GCAGTTTCCCGACTCC ATCTGT | |
| <i>LC3B</i> | Hs | GAGAAGCAGCTTCCTGT TCTGG | GTGTCCGTTACCAAC AGGAAG | |
| <i>SQSTM1/p62</i> | Hs | TGTGTAGCGTCTGCGAG GGAAA | AGTGTCCGTGTTTAC CTTCCG | |
| <i>Tnfa</i> | Mm | CTCCAGGCGGTGCCTAT GT | GAAGAGCGTGGTGGC CC | Probe: CAGCCTCTTCTC ATTCTGCTTGT GGC |
| <i>Ifna</i> | Mm | CTTCCACAGGATCACTG TGTACCT | TTCTGCTCTGACCACCT CCC | Probe: AGAGAGAAGAAA CACAGCCCCTGT GCC |
| <i>Ifnb1</i> | Mm | CTGGAGCAGCTGAATG GAAAG | CTTCTCCGTCATCTCCA TAGGG | Probe: CAACCTCACCTA CAGGGCGGACTT CAAG |
| <i>Actb</i> | Mm | AGAGGGAAATCGTGCGT GAC | CAATAGTGATGATGAC CTGGCCGT | Probe: CACTGCCGCATC CTCTTCTCTCC |
| <i>ACTB</i> | Hs | ATCCTGGCCTCGCTGTC CAC | GGGCCGGAICTCGTCAT AC | |
| Guide RNA for CRISPR-Cas9 knockout | | | | |
| <i>ATG16L1</i> | Hs | GGGGGAAGTCAGCGGC GCGG | | |
| <i>ATG12</i> | Hs | GTCTTCCGCTGCAGTTT CCC | | |
| <i>MSR1</i> | Hs | TGATCTCAGACTGAAAG ATT | | |
| <i>SQSTM1/P62</i> | Hs | CGAGCCTGAGGCGGAA GCCG | | |

Supplementary Table 1 Oligo DNA sequences. Homo sapiens (Hs), Mus musculus (Mm), Chikungunya virus (CHIKV).