

Description of Additional Supplementary Files

File name: Supplementary Movie 1

Description: Time-lapse images of HeLa cells co-expressing GFP-tagged EqtSM (left, *green*) and mCherry-tagged Gal3 (middle, *magenta*) treated with 1mM LLOMe for the indicated time. Images were captured every 30 s. Scale bar, 10 μm .

File name: Supplementary Movie 2

Description: Time-lapse images of RAW264.7 cells expressing GFP-tagged EqtSM (*green*) infected with mCherry-expressing *M. marinum* (*magenta*). Images were captured every 60 s. Scale bar, 10 μm .

File name: Supplementary Movie 3

Description: Time-lapse images of HeLa cells expressing GFP-tagged EqtSM locally wounded by a brief pulse from a 2-photon laser at high relative intensity (top wound, $t = 0$ s) and low relative intensity (bottom wound, $t = 65$ s). Images were captured every 5 s. Scale bar, 10 μm .

File name: Supplementary Movie 4

Description: Time-lapse images of HeLa cells expressing GFP-tagged EqtSM (left, *green*) and labeled with LysoTracker (middle, *red*) during and after a 2 min-pulse of GPN (200 μM). Images were captured every 30 s. Scale bar, 10 μm .

File name: Supplementary Movie 5

Description: Time-lapse images of HeLa cells expressing EqtSM-Halo labeled with silicone rhodamine (*blue*) and infected with *Salmonella* carrying a plasmid for constitutive expression of dsRed (*magenta*) and encoding sfGFP under control of the glucose-6-phosphate (G6P)-inducible promoter P_{uhpT} (*green*). Images were captured every 2 min, starting at 30 min post-infection. Scale bar, 10 μm .

File name: Supplementary Movie 6

Description: Time-lapse images of HeLa cells co-expressing mKate-tagged EqtSM (left, *green*) and eGFP-tagged CHMP4B (middle, *magenta*) treated with 1 mM LLOMe for the indicated time. Images were captured every 10 s.

Scale bar, 10 μm .

File name: Supplementary Movie 7

Description: Time-lapse images of HeLa cells co-expressing mKate-tagged EqtSM (left, *green*) and GFP-tagged LAMP1-bSMase (middle, *magenta*) treated with 1 mM LLOMe for the indicated time. Images were captured every

30 s. Scale bar, 10 μm .

File name: Supplementary Movie 8

Description: Time-lapse images of HeLa cells co-expressing mKate-tagged EqtSM (left, *green*) and GFP-tagged LAMP1-bSMase^{dead} (middle, *magenta*) treated with 1 mM LLOMe for the indicated time. Images were captured

every 30 s. Scale bar, 10 μm .