

Supplementary Methods

Image J Macro for quantification of DAPI-positive nuclei

```
dir1 = getDirectory("INPUT");
dir2 = getDirectory("OUTPUT");
setBatchMode(true);
list = getFileList(dir1);
for (i=0; i<list.length; i++)
{
    open(dir1+list[i]);
    title = File.nameWithoutExtension ;
    run("Split Channels");
    saveAs("Tiff", dir2+title+"_DAPI.tif");
        close();
        close();

        open(dir2+title+"_DAPI.tif");
        run("Unsharp Mask...", "radius=500 mask=0.90");
        run("Median...", "radius=10");
        run("Make Binary");
        run("Fill Holes");
        run("Adjustable Watershed", "tolerance=9");
        run("Analyze Particles...", "size=6-Infinity summarize");
        saveAs("Tiff", dir2+title+"_DAPI_counts.tif");
            close();

}
setBatchMode(false);
selectWindow("Results");
saveAs("Results", output + filename + ".csv");
showMessage("You're awesome!");
exit();
```

Image J Macro for quantification of LC3-positive dots

```
dir1 = getDirectory("INPUT");
dir2 = getDirectory("OUTPUT");
setBatchMode(true);
list = getFileList(dir1);
for (i=0; i<list.length; i++)
{
    open(dir1+list[i]);
    title = File.nameWithoutExtension ;
    run("Split Channels");
    saveAs("Tiff", dir2+title+"_LC3L.tif");
        close();
        close();

        run("Subtract Background...",
"rolling=60");
        setThreshold(75, 255);
        run("Convert to Mask");
        run("Watershed");
        run("Analyze Particles...", " summarize");
            saveAs("Tiff", dir2+title+"_LC3_binary.tif");
            close();

}
setBatchMode(false);
selectWindow("Results");
saveAs("Results", output + filename + ".csv");
showMessage("You're awesome!");
exit();
```

Image J Macro for quantification of ATG16L1-positive dots

```
dir1 = getDirectory("INPUT");
dir2 = getDirectory("OUTPUT");
setBatchMode(true);
list = getFileList(dir1);
for (i=0; i<list.length; i++)
{
    open(dir1+list[i]);
    title = File.nameWithoutExtension ;
    run("Split Channels");
    saveAs("Tiff", dir2+title+"_ATG16L.tif");
        close();
        close();

        run("Gaussian Blur...", "sigma=3");
        run("Subtract Background...", "rolling=8");

        setThreshold(50, 255);
        run("Convert to Mask");
        run("Watershed");
        run("Analyze Particles...", " summarize");
        saveAs("Tiff", dir2+title+"_ATG16L_binary.tif");
        close();
}
setBatchMode(false);
selectWindow("Summary");
saveAs("Text", dir2+"Summary2.txt");
showMessage("You're awesome!");
exit();
```

Image J Macro for quantification of WIPI2-positive dots

```
dir1 = getDirectory("INPUT");
dir2 = getDirectory("OUTPUT");
setBatchMode(true);
list = getFileList(dir1);
for (i=0; i<list.length; i++)
{
    open(dir1+list[i]);
    title = File.nameWithoutExtension ;
    run("Split Channels");
    saveAs("Tiff", dir2+title+"_WIPI2.tif");
        close();
        close();
        run("Gaussian Blur...", "sigma=3");
            run("Subtract Background...", "rolling=6");
            setThreshold(40, 255);
                run("Convert to Mask");
                run("Analyze Particles...", " summarize");
                    saveAs("Tiff", dir2+title+"_WIPI2_binary.tif");
                    close();
}
setBatchMode(false);
selectWindow("Summary");
saveAs("Text", dir2+"Summary2.txt");
showMessage("You're awesome!");
exit();
```

Image J Macro for colocalization analysis of ATG16L1 & LC3 using Pearson's correlation coefficient after Costes automatic thresholding

```
dir1 = getDirectory("INPUT ");
dir2 = getDirectory("OUTPUT ");
setBatchMode(true);
list = getFileList(dir1);
for (i=0; i<list.length; i++)
{
    open(dir1+list[i]);
    title = File.nameWithoutExtension ;

    //save channels
    getTitle();
    run("Split Channels");
    selectWindow("C3-"+title+".czi - "+title+".czi #1");
    close();
    selectWindow("C1-"+title+".czi - "+title+".czi #1");
    rename("C1");
    selectWindow("C2-"+title+".czi - "+title+".czi #1");
    rename("C2");

    run("JACoP ", "imga=[C1] imgb=[C2] pearson costesthr ica
costesrand=10-1-1000-0.001-0-false-true-true");
    close();
    close();
    close();
    close();
    close();
    close();
    close();
    close();
    close();

}
setBatchMode(false);
selectWindow("Log");
saveAs("Text", dir2+"Summary.txt");

    showMessage("JaCoP done!");
```