

# A new model of esophageal cancers by using a detergent-free decellularized matrix in a perfusion bioreactor

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## Supplementary material:

*Code for semi-quantitative image processing.*

Based on the reference [1] and with NIH ImageJ Software, a customized code was written to generate semi-quantitative Data for slides taken of ROI data:

```
extension = ".jpg";
dir1 = getDirectory("Choose Source Directory ");
//dir2 = getDirectory("Choose Destination Directory ");
setBatchMode(true);
n = 0;
processFolder(dir1);

function processFolder(dir1) {
    list = getFileList(dir1);
    for (i=0; i<list.length; i++) {
        if (endsWith(list[i], "/"))
            processFolder(dir1+list[i]);
        else if (endsWith(list[i], extension))
            processImage(dir1, list[i]);
    }
}

function processImage(dir1, name) {
    open(dir1+name);
    print(n++, name);
    // below is code to analyze and process the image
    open(dir1+name);
    run("Colour Deconvolution2", "vectors=[H DAB] output=8bit_Transmittance
simulated cross hide");
    selectWindow(name+"-(Colour_3)");
    selectWindow(name+"-(Colour_2)");
    setAutoThreshold("Default no-reset");
    setThreshold(0, 117);
    setOption("BlackBackground", false);
    run("Convert to Mask");
    run("Measure");
    selectWindow(name+"-(Colour_1)");
    setAutoThreshold("Default no-reset");
    setThreshold(0, 114);
    run("Convert to Mask");
    run("Watershed");
```

```
run("Analyze Particles...", "size=19.50-26.00 exclude summarize");  
//saveAs(extension, dir2+name);  
}
```