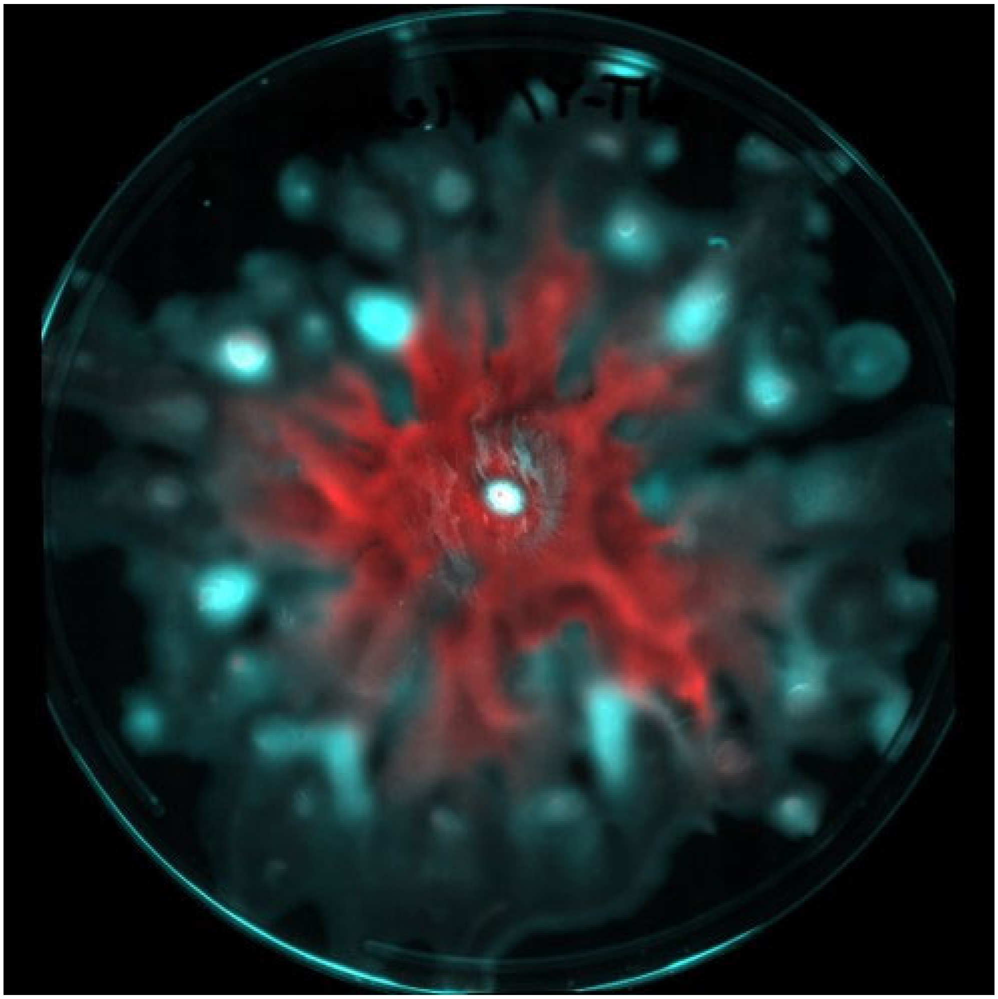
In [71]:

```
using Images
```

In [72]:

```
img = load("wt-hy-exp-1.jpg")
```

Out[72]:



In [73]:

```
lside = size(img)[1] #assume image is square.
```

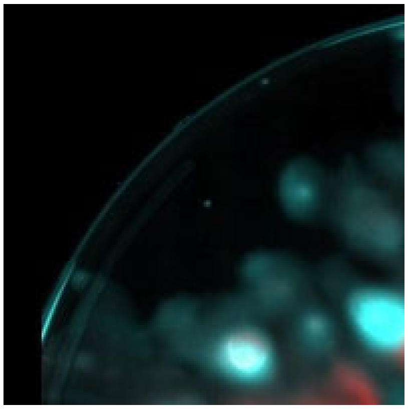
Out[73]:

```
495
```

In [74]:

```
#get part of image!
img[1:200, 1:200]
```

Out[74]:



In [75]:

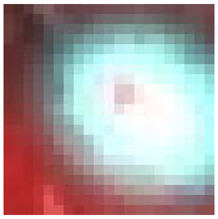
```
imcent = lside ÷ 2;
img[imcent, imcent]
```

Out[75]:

In [76]:

```
img[imcent-10:imcent+10, imcent-10:imcent+10] #validate my assumption that the center is indeed, centered.
```

Out[76]:



In [77]:

```
maxr = lside ÷ 2; #ignore anything further than this, ie far corners.
```

In [80]:

```
data_dict = Dict{Int, Vector{N0f8}}() #map radius to a (variable-length) vector of all the intensities.
#for every pixel in the image
for ro in 1:lside
    for co in 1:lside
        #compute its radius (round to integer for ease of categorizing! 1 pixel = 1 unit.)
        radius = Int(round(sqrt((ro - imcent)^2 + (co - imcent)^2)));
        if radius > maxr
            continue
        end
        #compute its intensity for WT (red-ish in color, for simplicity assume equivalent to red channel)
        pxl = img[ro, co];
        intensity = red(pxl);
        if !haskey(data_dict, radius)
            data_dict[radius] = N0f8[];
        end
        push!(data_dict[radius], intensity);
    end
end
```

In [99]:

```
#finally, get all averages by radius, for plotting
rdata = Any[]; intensedata = Any[];
for rad in keys(data_dict)
    push!(rdata, rad);
    avg_intensity = sum(data_dict[rad]) / length(data_dict[rad]); #could also use stats package
    push!(intensedata, avg_intensity);
end
```

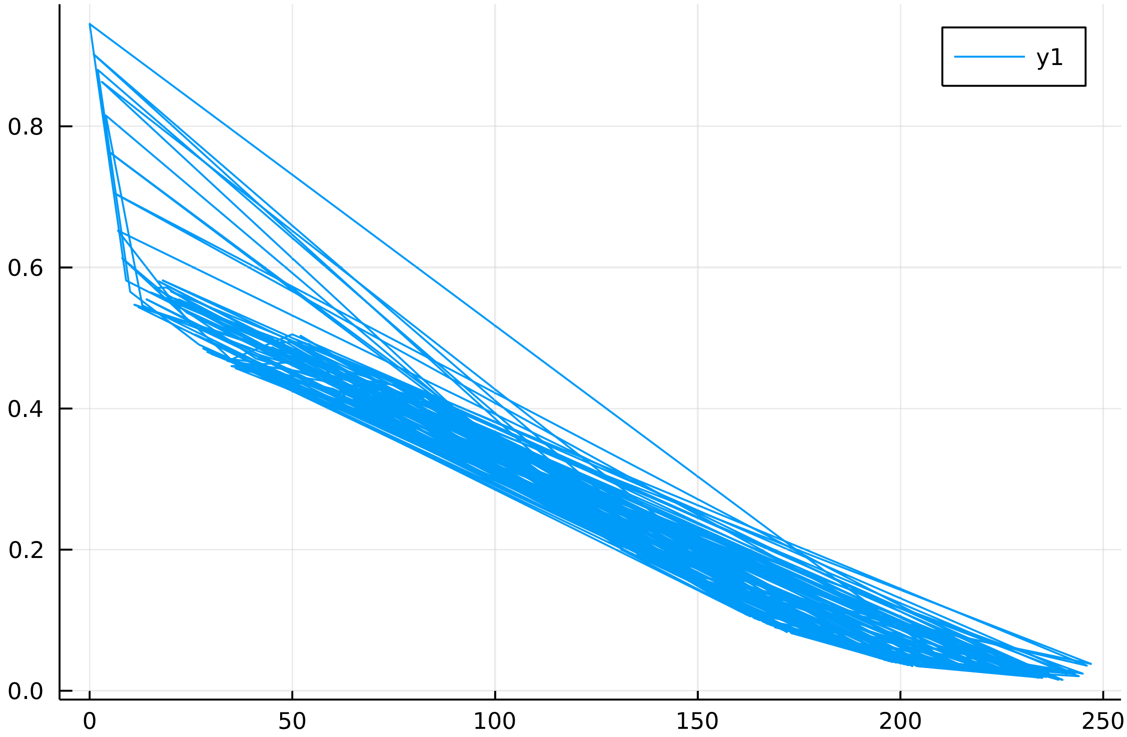
In [93]:

```
using Plots
```

In [108]:

```
plot(rdata, intensedata)
```

Out[108]:

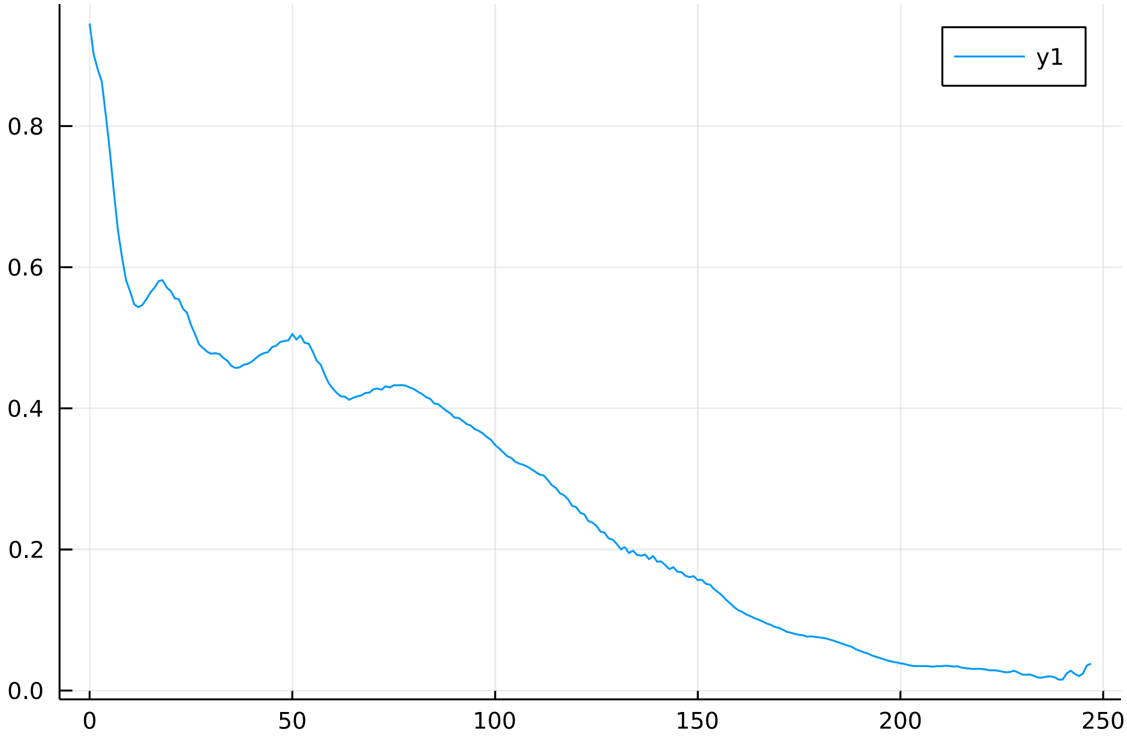


In [112]:

```
#try again, this time sorted
rdata = Any[]; intensedata = Any[];
for rad in sort(collect(keys(data_dict))) #sort!!
    push!(rdata, rad);
    avg_intensity = sum(data_dict[rad]) / length(data_dict[rad]); #cou
ld also use stats package
    push!(intensedata, avg_intensity);
end
```

```
In [113]: plot(rdata, intensedata)
```

Out[113]:


y1
0.0
0.2
0.4
0.6
0.8
0
50
100
150
200
250