From: **Shawn Douglas** shawn.douglas@gmail.com
Subject: Re: gel buffer dyes - keynote file
Date: February 15, 2018 at 4:00 PM
To: Chaim Gingold cg@levitylab.com

SD

Agreed it would be neat to tune the molecular icons a bit. There's another level of difference we could emphasize too: As I mentioned, these dyes are tiny in molecular weight compared to DNA, so their migration speed is due to other properties. It seems that xylene cyanol has a net charge –1, so it moves the slowest.

The SVG background can be changed or removed transparent by editing the SVG file. The sdftosvg programs defaults to white. The reason I used non-white background is that some of the atoms are drawn white in the default color scheme, so we'd need to change that in order to get them to show up. I'll go ahead and re-make them at some point to use all non-white atom colors.

I'm just going to note how I make the icons here so we can come back to it.
It's still a manual process but could be scripted for lots of molecules with a little extra work.

1. Visit https://pubchem.ncbi.nlm.nih.gov/ and find the desired compounds

Xylene cyanol https://pubchem.ncbi.nlm.nih.gov/compound/101246519
(Alternative Xylene cyanol: https://pubchem.ncbi.nlm.nih.gov/substance/57654732)
Cresol red https://pubchem.ncbi.nlm.nih.gov/compound/73013
Bromophenol blue https://pubchem.ncbi.nlm.nih.gov/compound/8272
OrangeG https://pubchem.ncbi.nlm.nih.gov/compound/9566064
Tris base https://pubchem.ncbi.nlm.nih.gov/compound/6503
Boric acid https://pubchem.ncbi.nlm.nih.gov/compound/7628
Acetic acid https://pubchem.ncbi.nlm.nih.gov/compound/176
EDTA https://pubchem.ncbi.nlm.nih.gov/compound/6049

2. Navigate down to the "2D structure" section **Download** button, and choose **SDF → Save** to get the SDF file.
3. Install sdftosvg if necessary: `npm install sdftosvg`
4. For each SDF structure, run sdftosvg on the input to create the SVG file, e.g.

```
`./node_modules/.bin/sdftosvg -b "#dddddd" "Structure2D_CID_6049.sdf"
EDTA.svg`
```

5. To remove the background, open the SVG file and delete the path.