

Sub-cellular localization in a cell

Mentors :

Tatyana Goldberg

Juan Miquel Cejuela

Group : 3BioGirls

Madhura Kumaraswamy

Prapaporn Dangnoy

Maribel Guzman Marcial

“To visualize biological cells and highlight by a user selected sub-cellular compartments in a way that they stand out from the un-selected ones”

- Use cases
 - Case 1 : One protein, one localization
 - Case 2 : One protein, multiple localizations
 - Case 3 : Multiple proteins, multiple localizations
- Libraries
 - D3 Data-Driven Documents
- Data
 - Input file format

Eukaryota				
0-100				
Protein id	Score	Localization	Additional column 1	Additional column 2
sp P34795 G6PI_AR ATH	100	cytoplasm		
sp O24621 SIGC_A RATH	30	chloroplast		

- Identification of all cell compartments using GIMP image editor
- Calculation of number of proteins in each cell's compartment
- Each compartment highlighted using a localization color scale
- Tooltip displayed upon "mouse over" over cell's compartment
- Cell image updated on clicking of protein in tooltip
- Cell compartments highlighted using a score color scale

Live demo

■ Lessons Learned

- Knowledge in Javascript functions
- Usage of tools such as
 - GIMP
 - Photoshop
 - Image generator - <http://imagemap-generator.dariodomi.de/>
 - Github
- Team work

■ Challenges

- Highlighting cell's compartments
- Mixing statistics with fancy colors dynamically
- Time management

Thank you for your attention
Q&A