

Reading a Proteopedia article, writing a constructive critique and giving an oral presentation (Lesson R-KT)

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This is an activity developed for a one-semester biochemistry course at Westfield State University by Karsten Theis. Student worked on this assignment in stages over the second part of the semester, with the presentations given during finals period.

Part A

Choose a topic (i.e. a Proteopedia article) to work on. You can choose from the following (they are all high quality articles featured in the Journal of Biochemistry and Molecular Biology Education).

1. [Beta-Prime Subunit of Bacterial RNA Polymerase](#)
2. [Citrate Synthase](#)
3. [DNA](#)
4. [Dipeptidyl peptidase IV](#)
5. [Eukaryotic Protein Kinase Catalytic Domain](#)
6. [Fatty acid amide hydrolase GPR40](#)
7. [Glucagon receptor](#)
8. [HMG-CoA Reductase](#)
9. [Hormone sensitive lipase](#)
10. [Hox protein](#)
11. [Keratins](#)
12. [Large Ribosomal Subunit of Haloarcula](#)
13. [Lysophosphatidic acid receptor](#)
14. [Metabotropic glutamate receptor 5](#)
15. [Monoglyceride lipase](#)
16. [Neurotensin receptor](#)
17. [P53-DNA Recognition](#)
18. [Palmitoyl protein thioesterase](#)
19. [Phosphoinositide 3-Kinases](#)
20. [RNase A](#) or [RNaseA Nobel Prizes](#)
21. [Ricin](#)
22. [Rossmann fold](#)
23. [Triose Phosphate Isomerase](#)

-continued

Part B

In writing, analyze the Proteopedia article (mainly one figure) using the following section headings and providing the following content, and shared your suggestions for improvement:

1. **“My favorite figure”**: state the name of the Proteopedia article, name of "green link" that opens the figure, the protein database ID of the structure, the link to the Jmol script, the primary citation for the coordinates and one other reference, for example from NCBI books)
2. **“This is my suggestion for a figure caption”**: formulate caption that explains what you need to know to appreciate the figure.
3. **“What I like about the figure”**: use a rubric (below) for categories you might consider. The rubric is also at https://proteopedia.org/w/Image:Proteopedia_rubrics.pdf.
4. **“Corresponding figure in the primary citation”**: check the primary citation if you find a figure that makes the same main point)
5. **“How I think the figure could be improved”**: Here, explain how changes in the figure might avoid confusion or frustration, if any, you experienced when first viewing it. Also, compare it with the published figure you identified in section 4, and make suggestions based on that.

Submit your written comments electronically together with the filled-out rubric. The critique will be posted on the discussion tab of the Proteopedia page, so it should be respectful of the work the authors did, and the criticism should be constructive (i.e. suggest some type of improvement that is possible with the tools available).

Criteria	3pts: Is above and beyond	2 pts: Does the job well	1 pt: Would benefit from editing (pet peeve alert)
Content	Rich content without overwhelming the viewer	Does what it says; supports the article's main points	1) Does not open 2) Wrong figure 3) Lacks essential item*: _____
Clarity	Beautiful or striking visuals	You can see the main point at a glance	1) View of focal item is blocked 2) Insufficient contrast between for- and background 3) Not clear what is what
Figure flow	Common visual language throughout, smooth transition between figures	Easy to recognize structural elements from figure to figure.	1) Switching color scheme too often 2) Easy to lose your bearings 3) Loading and orienting take too long
Support	1) Juxtaposed static figures (chemistry, sequences, related structures etc.) 2) Animations 3) Detailed figure legend	It is easy to understand the figure without leaving the page or going into jmol to research it.	1) No caption 2) Labels needed 3) Colors not explained
Interactivity	1) Kinemage-style switches 2) Prompts to id atoms or measure dimensions 3) Jmol buttons (slab on, rotate to common view etc.)	It is fun to explore the structure by rotating the scene and zooming into the details	1) Not centered 2) Confusing when you rotate view (e.g. labels not anchored) 3) Best view is lost because spinning is on

*choice of: PDB ID/hypothetical model designation, structural feature mentioned in the caption, ...

Here is [an example critique](https://proteopedia.org/w/Talk:Hormone_sensitive_lipase): https://proteopedia.org/w/Talk:Hormone_sensitive_lipase

Part C

In a 7-10 minute presentation given in class (no slides, use Proteopedia scenes for visuals), introduce the topic and then go into one specific detail you found interesting, using a figure from the Proteopedia page to illustrate (a logical choice would be the one you wrote about in part B).