

Guidelines for the Molecular Anatomy Project (MAP) Articles

The MAP site offers a structural perspective of human biology. To this end, the descriptions and discussions should focus on how molecules function and interact at a structural level. Presently, articles in MAP are mainly of 2 kinds – (i) molecule articles or (ii) disease articles. The following sections provide some guidelines for writing MAP articles.

All articles should be concise, but should cover all major details known about the molecule (there is no page limit for the articles). The articles should have original text with appropriate attributions (citations) and all images (especially the structure figures) must be original.

Molecule articles:

Molecule articles should include sections that minimally cover the following aspects:

1. *What is the molecule?* Clearly state the name of the molecule and include any synonyms etc. Describe the overall function of the molecule along with any classifications, such as “this enzyme is a hydrolase that helps with cleavage of XXX bonds” etc. It should be clearly explained if the structure described here is that of the complete molecule or of a specific portion of the molecule. If available and appropriate, references to sequence databases can be included here. For descriptions of specific domains of the molecule, it may be useful to include a drawing/cartoon of where in the protein the domain appears.
2. *Where is it produced in the body? Where does it act?* If available, the source organ, tissue and organelle where the molecule is produced and acts should be included here. This information will help put the entire discussion in perspective.
3. *What does the molecule look like?* Describe the overall shape of the molecule or domain (in text and in figures). Highlight any notable structural folds or features, and any special chemistry that is known to stabilize the structure. If possible, separate figures should be included to highlight these structural details.
4. *How does it function?* Provide a structural interpretation of the function of the molecule – highlight the active site, binding site etc. of the molecule and discuss any special properties such as charge distribution, hydrophobicity etc. If applicable, discuss in text and figures the activation/inhibition of the molecule and how it interacts with its binding partners. The mechanism of action should also be included with reference to the 3D structure where appropriate.
5. *Known disease affiliations:* This is an optional section and not required for all molecule articles. If the molecule, its mutant or variant is known to either cause or is affected by a disease, describe that here. Include figures to highlight how the normal and diseased states of the protein compare. Discuss in words how the changes in the diseased state impact the protein’s form and function.
6. *Diagnostics/Treatment:* This is an optional section and can be included when information is available. If the molecule is a current or potential drug target describe that along with figures describing how and where the drug binds and how the binding affects the molecule.

7. *Suggestions*: This section (to be included separately) is optional. Any novel ideas about how this molecule can be used for diagnostics/treatments based on the molecule's structure/function/interactions can be included in this section.

Disease articles:

These articles should focus on the disease, where the normal functioning of one or more molecules is altered, leading to a diseased state. These articles should provide a structural perspective of the involvement and role of all molecular players. In general, disease articles should cover the following aspects:

1. *What is the disease?* This should be an introductory section which clearly states the name of the disease and any available explanations for why it is called by that name (such as the disease is named after the main symptom or after a famous person who had this disease etc.). Include a list of all other names this disease is known by. Briefly describe the main symptom of the disease and the organ system(s), organs and tissues it affects. Keep the description of symptoms short and non-technical. All medical/technical terminology related to the disease should be briefly explained so that the article is accessible to non-expert audiences too. Remember this section is just an introduction to the structurally oriented article.
2. *What molecules cause/are affected by the disease? How?* Provide a list of all molecules that either cause or are affected by this disease. Include a drawing/diagram describing how these molecules are associated with the disease – is it a marker for the disease, is it mutated to cause the disease or is it altered as a result of the disease etc.
3. *How is this disease caused?* Discuss any genetic or environmental factors that lead to the disease. Include descriptions about how this disease can be identified or diagnosed. Relate the genetic or environmental factor to the molecules associated with the disease and highlight the structure(s) affected.
4. *Normal vs diseased states:* Compare the structures of the normal and diseased (mutant/variant) forms of the involved molecules and describe changes in their properties, binding, stability etc. Describe how these changes contribute to the main symptom(s) of the disease. Note, that the discussions here should be focused on the structural changes of the molecules and not so much on the disease symptoms.
5. *Known diagnosis/treatments:* This is an optional section. If there is a current diagnosis/treatment available for the disease, and the molecules that are used/affected are known, describe in text and images a structural view of how this all works. For example, describe how and where the drug binds and how the binding affects the molecules.
6. *Current research on new diagnosis/treatments for the disease:* This is an optional section. If structural information about potential diagnostics or treatments for the disease is available include that here.
7. *Suggestions*: This section (to be included separately) is optional. Any novel ideas about diagnostics/treatments for the disease based on the structures of the causing or affected molecule(s) can be included in this section.