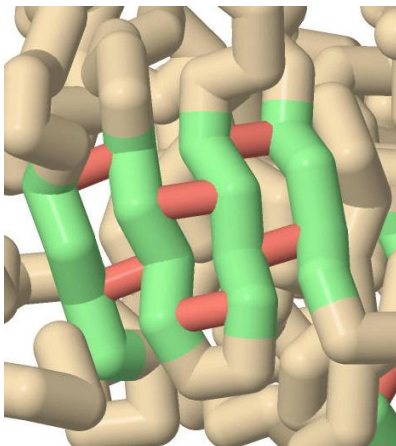


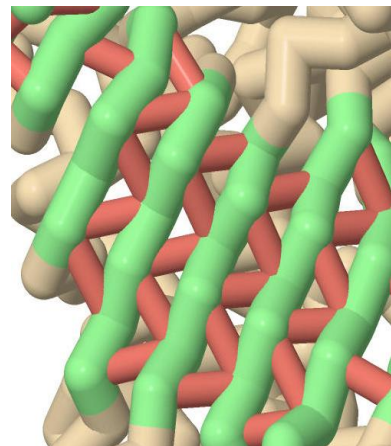
Model Design Checklist

Prior to submitting your SMART Team’s model design, your team must review the model file using the following checklist of required features!

- 1. Alpha-carbon backbone format: _____
- 2. Disulfide bonds added: _____
- 3. Design Values:
 - a. Backbone 1.5 _____
 - b. Hbonds 1.0 _____
 - c. Wireframe 1.0 _____
 - d. Spacefill 1.25 _____
 - e. Struts 1.0 _____
 - f. Disulfide bonds 1.0 _____
- 4. Hbond Specifics:
 - a. Add Hbonds to beta sheets only _____



Hbond configuration (shown in salmon) between anti-parallel beta sheet strands
CORRECT!

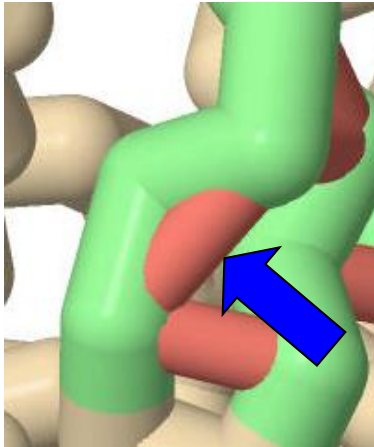


Hbond configuration (shown in salmon) between parallel beta sheet strands
NOTE: These are NOT “triangle” bonds!
ALSO CORRECT!

b. Set Hbonds backbone

c. Set Hbonds solid

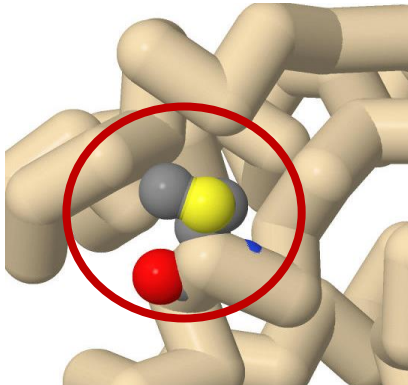
d. Identify and remove "triangle" Hbonds



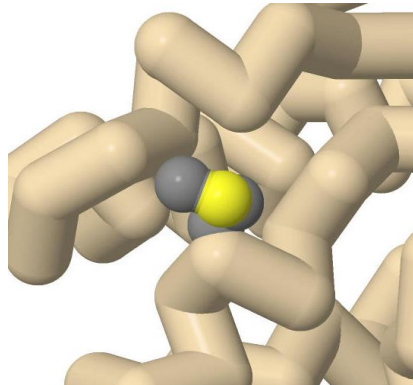
Remove "triangle" Hbonds indicated by the blue arrow in the picture at left.

NOTE: A true "triangle" Hbond is never found between two different beta strands in a beta sheet but rather within the same beta strand. The amino acids forming the bond are 2 positions apart from one another. For example, the Hbond forms between amino acid 201 and amino acid 203.

5. Relevant sidechains are displayed with a "clean backbone":

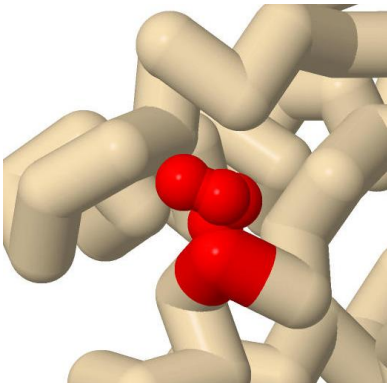


Bumpy backbone circled in red
INCORRECT!

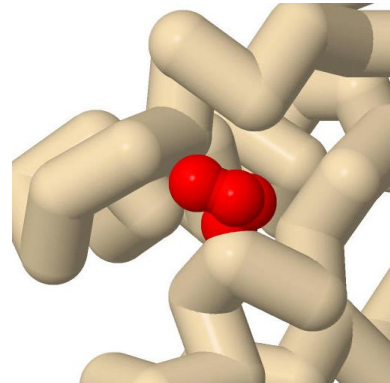


Sidechain added with "clean backbone"
CORRECT!

6. Relevant sidechains are appropriately colored without coloring the alpha-carbon backbone:



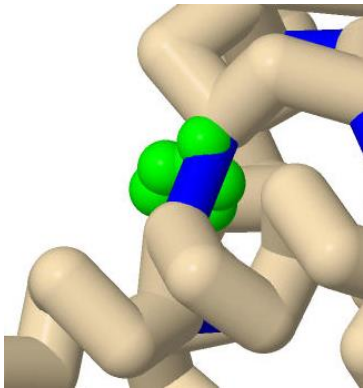
Sidechain and backbone colored
INCORRECT!



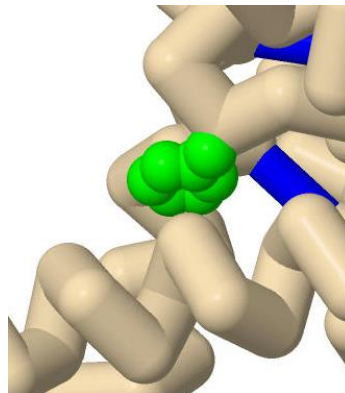
Only the sidechain is colored
CORRECT!

7. Struts added: _____

8. Remove struts that obscure relevant sidechains: _____

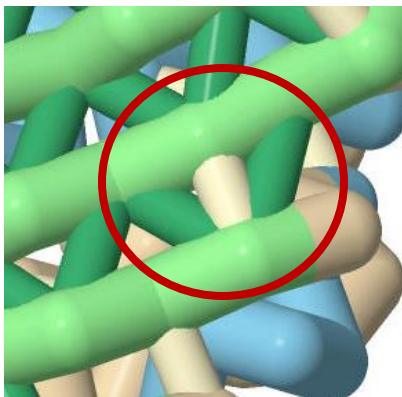


Sidechain "skewered" by strut
INCORRECT!

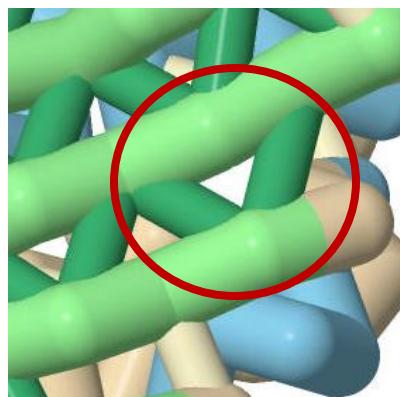


Strut removed
CORRECT!

9. Remove extraneous struts: _____



Strut (colored lemon chiffon) splits
Hbonds (colored medium sea green)
INCORRECT!



Strut removed
CORRECT!

10. **UPDATE AND SEND THE MODEL DESIGN DETAIL SHEET WITH THE MODEL FILE!** _____

Please refer to the digital version or the printable version of the **Jmol Training Guide** in the "Team Resources" section of the SMART Team website to address any model design flaws.

<http://cbm.msoe.edu/smartTeams/smartTeamsResources.php>