

The Stereoisomer Project

Of all the forms of isomerism, stereoisomers are the most interesting biologically.

In this project, you will choose two partners; your team will research a stereoisomer-related topic and present your findings to the class in a **five-minute oral report**, which uses at least two illustrations. Your team will also turn in a **written version** of the report, including a bibliography using standard scientific citation format (see article bibliographies in journals such as *Science* or *Nature* for examples).

There will be a calendar circulating around the class today with the possible time slots for your team's talk. Choose one by entering you and your partners' names, as well as the name of the topic, in the chosen time slot.

Points your talk should cover:

- What are the stereoisomers in the topic? What are their structures, and where do they differ (i.e., where are the key chiral centers)?
- When was the research work on this topic done? Who (at what institution) did it? Note that this can have multiple answers spanning decades.
- In what way does their stereoisomerism affect their physical properties or their physiological interactions?
- Give an example of a recent research or clinical application, if that exists.

But don't linger on any given point; you only have **five minutes!**

Don't forget:

At least **two illustrations** for your talk, which may be drawn on the whiteboard, projected from a web page, Powerpoint presentation or other computer-aided picture, or displayed on a handout, transparency or posterboard. You will have a PC/projector and an overhead projector available.

The written report should be **word-processed, double-spaced and proofread**. If you need someone to proofread your work, the Loft (2nd floor of the Library) is an excellent resource. There is no minimum size of the report, but it should address all of the bulleted points above. The bibliography should contain at least **one non-textbook source**, and, at this point in your academic careers, you should not be citing any encyclopedias, including Wikipedia. A nice touch is to find original research papers found in journals, such as *Journal of Organic Chemistry*, *Journal of Medicinal Chemistry* and *Tetrahedron Letters*. We are equipped to get some of these journals electronically through the Library; paper copies are found in Suzzallo Research Library, the Health Science Library or the Chemistry Library at the University of Washington.

List of stereoisomers topics

Tocopherol (Vitamin E) and vitamin efficacy

Salbutamol: an effective asthma medicine

Carvone and the chemistry of odor

Limonene and the chemistry of odor

Tartaric acid and the “invention” of stereochemistry

Thalidomide: the wonder drug that became a horror

Amino acids and the chemistry of taste

Retinal and the chemistry of color vision

Lactic acid and enzyme stereospecificity

Can we use *any* L-sugars for energy?