

## EXAMPLE OF ABSTRACT

A Determination of the Oligosaccharide Binding Specificity of Lectins from *Pisum sativum* and *Lens culinaris*

Stephen Kerry Kornfeld, 50 Villa Coublay, Frontenac, Missouri 63131

Ladue Horton Watkins High School, St. Louis, MO

Teacher and/or Sponsor: Mr. Anthony Kardis

Lectins agglutinate red blood cells by binding to cell surface glycoproteins. The lectins recognize and bind to the sugar portions of the glycoproteins. Because different lectins are specific for different sugar sequences, lectins are useful tools for fractionating and isolating glycoproteins. This study was to determine the precise oligosaccharide binding of the pea (*Pisum sativum*) and the lentil (*Lens culinaris*) lectins. The lectins were covalently bound to an insoluble support, Sepharose, which was suitable for affinity chromatography. A variety of radioactively labeled glycopeptides with different oligosaccharide structures were tested for binding to the lectin affinity columns. The conclusion is that affinity binding to the pea and lentil lectins requires at least two  $\alpha$ -linked mannose residues that are not substituted at positions 3, 4 or 6 as well as the fucose residue. While the mannose and fucose residues are essential for high affinity binding, neither sugar residue by itself is sufficient for binding. With this information, these two lectins can become useful tools for fractionating the glycoproteins of animal cells.

## HINTS ON WRITING AN ABSTRACT<sup>1</sup>

An important part of a completed research investigation is the writing of a concise statement called an abstract. It is through abstracts that the products of research are most likely to be disseminated. Think of the abstract as a first announcement that has been carefully written to convey the essence of what has been done and to spur the reader to take a closer look if the project is in one of his fields of interest.

Scientists read and explore bound volumes of abstracts sometimes old ones as well as new ones. These volumes are part of the system through which the scientist and engineering communities keep their members up-to-date and help them avoid re-doing a project completed successfully years earlier. Progress, new research, and new applications of existing knowledge often result from ideas, questions, and even doubts sparked in the minds of readers as they thumb through collections of research abstracts. Therefore, it will be desirable for you to try to write an abstract that fits into this established system of communication.

The abstract should be no longer than one-half of an 8-1/2 x 11 inch page, single-spaced. It is not an in-depth treatment of the project. If it is considered essential, the object of the project may be stated but its reason for performance need not be justified. The abstract may give some information concerning the project's origin or rationale. The body of the abstract should consist of short, precisely worded sentences, outlining what the researcher did. It identifies the quantities explored, the variables isolated and compared, and the kinds of analysis employed. Then, a conclusion is presented, a concise statement of what has been learned.

The main points in writing an abstract are (1) keep it short, (2) be precise, (3) stick to the topic, (4) do not use first person pronouns, and (5) check grammar carefully. The task is to write what was done, how it was done, and what the findings showed. Expect writing an abstract to be a laborious task. Spend time on it. Do not underestimate its worth. It may convey the first news of your findings that the scientific world has received!

---

<sup>1</sup>Guidelines for High School Students on Conducting Research in the Sciences by Laurie A. Lyon, Moore Publishing Company, Box 3036, West Durham Station, Durham, North Carolina 27705, 1980. 47 pp.