

Laboratory Notebooks: Best Principles and Best Standards

EFFECTIVE DATE: June, 2016

Purpose

The Laboratory Notebook is the record kept

Determination of claims of discoveries

Laboratory notebooks provide important documentary evidence of the conception and reduction to practice of an invention. Generally a sketch and a brief written description are sufficient to establish However, r patent) invention. In either case it requires convincing, corroborating evidence of diligence (i.e. constant progress from the conception of an invention). A clear and thorough laboratory notebook can provide such evidence if the need arises.

Laboratory Notebook Content

There are many ways to record data. The Principal Investigator of the laboratory should be involved in laboratory notebook formatting before an individual invests time in a particular method. This guide provides a recommended method for content for recording critical content in a laboratory notebook.

1. Notebook name
2. Inside cover or cover page
 - Your name and year
 - General project name
 - Laboratory mailing address

Example: Laboratory Record
Patterns of Myosin Light Chain Isoenzymes in Developing Chick Skeletal Muscle
David R. Caprette
Department of Biochemistry & Cell Biology
Rice University
211A Anderson Biology Laboratory
6100 S. Main
Houston, Texas 77005
(555) 555-5555

3. Table of Contents

Page Number
Date
Subject/Experiment

It is preferable to include multiple levels in the table of contents, to allow additions to the table of content as experiments and data accumulate over time. For example, indicating where a new study starts and include subheadings for specific parts of a study, methods, sets of data, etc. The idea is to enable someone to locate anything quickly. Also, list each set of entries with dates and page numbers.

4. Body of notebook

- Experiment entries

Date

Title

Hypothesis or Goal: Brief statement of purpose

Background

How: Protocols, calculations, reagents, equipment (See Section Below)

Observations:

- All that happens (planned or unplanned)
- Raw experimental data
- Taped in information or reference to data location

Data analysis:

- Processing of raw data, graphs, interpretations

Ideas for future experiments

The focal point of the experimental entry is the observation(s) made. Thus, this is where information is recorded that happens throughout the experiment. At minimum, the record of every experiment should contain the date of the start of the experiment, title of the experiment, brief statement of purpose and a description of the experiment. Record any deviation from the protocol, whether planned, accidental or an error. This is where you record any raw data collected, such as numerical readings from a piece of equipment or qualitative observations such as reporting a reaction solution that may become cloudy or change colors. Notes should be clear and thorough, as often times it is difficult to anticipate what will be important prior to analyzing the data. Any data that is printed or written on a separate piece of paper should be dated secured in the laboratory notebook (e.g. taped or stapled). For data that cannot be included in the laboratory notebook (e.g. large data sets, multiple microscope images, etc.), provide a reference in the laboratory notebook identifying where such data is recorded or stored. Many times data may need to be processed before it can be completely understood or presented. The handling of this data should also be recorded in the laboratory notebook. Lastly, be certain to reference any software that is used, as well as the location of digital files.

There are ethical standards that must be followed. It is essential that all data be recorded in the laboratory

