

SOP: GBT.004
Version: 1.0
Title: Sample and Solution Labeling in the Biotechnology Laboratory

1.0 Purpose

To describe the procedure used to label samples and reagents prepared during experimental work in the Biotechnology Laboratory.

2.0 Scope

This protocol is applicable to any item prepared in the Biotechnology laboratory. This includes but is not limited to buffer solutions prepared by students, experimental samples (e.g. protein or DNA extracts), printed data reports (e.g. standard curve data), etc.

3.0 Responsibility

All students, lab assistants and instructors who prepare a solution, generate samples or generate other items for use in the Biotechnology laboratories shall follow this labeling protocol.

4.0 Procedures

4.1 Materials

- Permanent Marking Pen (e.g. “Sharpie”)
- Sample Container or item
- Labeling tape
- Laboratory Notebook or record sheet

4.2 Procedure

- 4.2.1 Labeling should be completed *before* the sample is placed into the container.
- 4.2.2 Be sure the container to be labeled is clean, dry and preferably at room temperature and that all previous labels have been completely removed.
- 4.2.3 Obtain the labeling tape corresponding to your bench color and cut an appropriate size piece.
- 4.2.4 Fold a small piece of tape over on one end to form a tab. This makes it easier to remove the tape when the bottle is to be cleaned.

- 4.2.5 Obtain a permanent marking pen and record the following information on the container label or on labeling tape:

Your initials - circle your initials

Course #

Contents - composition and concentration including pH

Expiration date - longest date is last day of lab for the given semester

Storage
Condi
tions

Sterility

XYZ	Prep. 04/22/00
	Exp. 05/15/00
TRIS Glycine Buffer 10X pH 9.0	
BT 204	RT / NS

- 4.2.6 Record the same information in your notebook or on the record sheet. Also include the storage location of the item.
- 4.2.7 Allow at least 1-4 minutes for the labeling ink to dry before allowing it to come into contact with moisture - e.g. ice bath, refrigerator, freezer, water bath,...

- 4.2.8 Add the sample to the container and carry out the procedure (e.g. store in refrigerator).
- 4.2.9 Record the storage location in the notebook or on the record sheet.

Questions about the Labeling Procedure:

1. What five pieces of information must be included on all labels in the Biotech program?
2. Before labeling what should the condition of the container be?
3. Why is a “tab” made with tape labels?
4. What conditions will cause the “permanent” ink label to become illegible or erased?
5. The white frosted area of a reagent bottle or piece of glassware should only be labeled using a _____ because _____.
6. In the space below write a label given the following information:
 - a. 500 ml of 0.200M Sodium Phosphate buffer was prepared at a pH of 7.4 and filter sterilized. To prevent microbial growth it is to be stored in the refrigerator. It was prepared October 1 by RSL and is usable for two weeks.

a.

GRM	Exp. 4/15/02
Sodium Chloride solution	
BT 200	RT /NS

b.

WDH
10 mM Tris pH 8.5

c.

VIQ	Exp. 2/15/03
BT 117	4°C / S

d.

5% BSA

e.

AB	3/03/08
BT 115	2.0 M KCl RT / S

Questions about the Labeling Procedure (answer key):

1. What five pieces of information must be included on all labels in the Biotech program?

Initials, expiration date, contents (including concentrations), course number and storage conditions

2. Before labeling what should the condition of the container be?

Clean, dry, all previous labels removed

3. Why is a “tab” made with tape labels?

Easier to remove label

4. What conditions will cause the “permanent” ink label to become illegible or erased?

- b. A solution of 10% SDS was prepared by MUK on 6/30/02. The solution is stable at room temperature for 6 months and does not need to be autoclaved.

<i>MUK</i>		<i>Prep.</i> 6/30/02
		<i>Exp.</i> 12/30/02
	<i>10% SDS</i>	
<i>RT</i>		<i>NS</i>

- c. A 0.5 M solution of EDTA was prepared at pH 8.5 by YZD. The solution is stable for 1 year at room temperature and was sterilized by autoclave.

<i>YZD</i>		<i>Prep.</i> 00/00/00
		<i>Exp.</i> 00/00/00+1
	<i>0.5 M EDTA pH 8.5</i>	
<i>RT</i>		<i>S</i>

- d. 1x DMEM medium for growing CHO cells was supplemented with 5% FBS. It was prepared by LLA and filter sterilized. It is stable for two weeks at 4°C. The date of preparation was 2/1/01.

<i>LLA</i>		<i>Prep.</i> 2/1/01
		<i>Exp.</i> 2/14/01
	<i>1X DMEM + 5 % FBS</i>	
<i>4°C</i>		<i>S</i>

7. What information is missing from the labels below:

a.

GRM	Exp. 4/15/02
Sodium Chloride solution	
BT 200	RT /NS

concentration of sodium chloride

b.

WDH
10 mM Tris pH 8.5

expiration date, course number, storage conditions

c.

VIQ	Exp. 2/15/03
BT 117	4°C / S

Component(s) and concentration(s)

Dr. Collins Jones
Room 421 HTSC
301-353-1910
cjones@mc.cc.md.us

General SOPs and Exercises
for All Biotechnology Laboratories©

Biotechnology Program
Montgomery College
Germantown, MD
BSMaT

d.

5% BSA

Initials of preparer, expiration date, course number, storage conditions

e.

AB	3/03/08
BT 115	2.0 M KCl RT / S

Label is correct as written

Instructor Notes :

CFR 21 states

“ all reagents and solutions in the laboratory areas shall be labeled to indicate
Identity
Titer or concentration
Storage requirements
Expiration Date

Deteriorated or outdated reagents and solutions shall not be used.”

We amend the statement for the BT lab to include additional information:

Identity (contents and concentration)
Initials of preparer
Course number
Titer or concentration
Storage requirements
Expiration Date

- < the importance of proper labeling must be emphasized

- < to reinforce this: Inform students cabinets, refrigerators, freezers will be checked weekly (minimum) and anything that is not labeled will be immediately discarded

- < Sharpies do not write well (if at all) on wet surfaces

- < If labels created with Sharpie (and most other lab markers) come into to contact with moisture before the ink is completely dried the label generally becomes illegible. For example storing marked vials with wet ink in the freezer.

- < Most “permanent ink” marking pens do not stand up to organic solvents (e.g. methanol, isopropanol, chloroform, acetone) so avoid contact or the label will be dissolved and disappear

Sometimes this can be overcome by putting a piece of scotch tape over the written label

- < the marking pen will quickly dry out and become non-functional if the lid / cap is left off for long periods of time

< please be sure students use tape to label with - it takes less time and effort to remove than if written directly on the bottle.

< tell students **NOT** to write on the white label of the autoclave bottle, beaker, Erlenmeyer flasks,... with ink pen or sharpies because it does not come off

Those labels on the bottle were designed to be written on in pencil only and are erasable only for pencil - remind students we do not use pencil in the Biotech labs

< explain how expiration dates are determined and the importance of following them

Expiration determination based on chemical / solution stability

Stability or sensitivity to:

Temperature : heat or cold

Light

Humidity

Spontaneous chemical decomposition

Microbial growth

< Some common label abbreviations (please feel free to add any you may know of and please mention them to the coordinator):

RT = room temperature

NS = non sterile

S = sterile