iGEM 2013 Basic Safety Form

Team name: IIT_Delhi

Deadline: 30th of August 2013

Submission method: email form to the correct email list for your region:

safety_forms_asia@igem.org
safety_forms_europe@igem.org
safety_forms_north_america@igem.org
safety_forms_latin_america@igem.org

Students can complete this safety form, but it must be read and signed (electronic or hard copy) by your team's faculty advisor. Your advisor must verify the information contained in this form and sign it.

The iGEM Safety Committee must be able to easily reach the advisor with questions or other follow-up communication. If you have made changes to your project (new coding regions or organisms) you must re-submit your safety form before wiki freeze (date TBD).

Key points to remember as you complete the safety assessment process:

- For help in completing questions 1 and 2, you may find it useful to consult the Risk Groups section of the Safety Resources List [2013.igem.org/Safety].
- The iGEM Safety Committee will be reviewing your project. To avoid temporary suspensions, answer these questions completely and accurately.
- The Safety Committee needs to be able to communicate with your faculty advisor about any safety concerns. If we cannot reach your advisor in a reasonable amount of time, you may be subject to restrictions at the Jamboree.
- Your safety page, wiki project page and poster should be consistent with each other. If you change your project, submit an updated Basic Safety Page to the iGEM Safety Committee before the wiki freeze. (Your faculty advisor must also read and sign the updated page.)
- We understand that projects may still be changing at a late date. However, large discrepancies between what you submit on the Basic Safety Page and what you present at the Jamborees may result in restrictions at the Jamboree.

Basic Safety Questions for iGEM 2013

a. Please describe the chassis organism(s) you will be using for this project. If you will be using more than one chassis organism, provide information on each of them:

	Species	Strain no/name	Risk Group	Risk group source link	Disease risk to humans? If so, which disease?
Ex	*E. coli* (K 12)	NEB 10 Beta	1	www.absa.org/riskgroups/bacteriasearch.php?genus=&species=coli	Yes. May cause irritation to skin, eyes, and respiratory tract, may affect kidneys.
1	E. coli	DH5a	1		Non-pathogenic
2					
3					
4					
5					
6					
7					
8					

*For additional organisms, please include a spreadsheet in your submission.

2. Highest Risk Group Listed:

1 (●) Greater than 1 ( )

If you answered 1+, please also complete the iGEM Biosafety form part 2 for any organisms in this category.

3. List and describe *all* new or modified coding regions you will be using in your project. (If you use parts from the 2013 iGEM Distribution without modifying them, you do not need to list those parts.)

	Part number.	Where did you get the physical DNA for this part (which lab, synthesis company, etc)	What species does this part originally come from?	What is the Risk Group of the species?	What is the function of this part, in its parent species?
Ex	BBa_C0040	Synthesized, Blue Heron	Acinetobacter baumannii	2	Confers tetracycline resistance

1	BBa_K1170000	Extracted in own Lab	E. coli K12	1	Acid Induction
2	BBa_K1170001	Extracted in own Lab using SFGFP gene (HQ873313.1)	SFGFP gene	-	Produces Green Fluorescence
3	BBa_K1170002	Extracted in own Lab	pUC19 plasmid	-	Produces B-Glucosidase enzyme
4	BBa_K1170003	Extracted in own Lab	C. glutamicum ATCC 13032	1	Alkali induction
5					
6					
7					
8					

*For additional coding regions, please include a spreadsheet in your submission.

4. Do the biological materials used in your lab work pose any of the following risks? Please describe.

a. Risks to the safety and health of team members or others working in the lab?

The strain of E. coli and C. glutamicum that we are using is non-pathogenic.

b. Risks to the safety and health of the general public, if released by design or by accident?

Our construct has no gene sequence that produces anything harmful or infectious. Even if the bacteria are released by accident, there is no possibility of the bacteria causing any harm to the general public due to the synthetic construct prepared by us.

c. Risks to the environment, if released by design or by accident?

The synthetic bacteria that we're creating does not produce anything that can cause harm to the environment. The bacteria, if released by accident, will not cause any harm or any infection.

d. Risks to security through malicious misuse by individuals, groups, or countries?

Our bacterial pH sensor does not contain any component that can cause any kind of threat to individuals, groups or countries. It does not produce any substance/metabolite that can can be misused by any party for causing harm to anyone.

5. If your project moved from a small-scale lab study to become widely used as a commercial/industrial product, what new risks might arise? (Consider the different categories of risks that are listed in parts a-d of the previous question.) Also, what risks might arise if the knowledge you generate or the methods you develop became widely available? (Note: This is meant to be a somewhat open-ended discussion question.)

Since our construct by itself cannot pose any threat to general public/environment and E. coli being non-pathogenic has been used in the past for industrial applications, we believe that scaling up will not bring up any new risks.

6. Does your project include any design features to address safety risks? (For example: kill switches, auxotrophic chassis, etc.) Note that including such features is not mandatory to participate in iGEM, but many groups choose to include them.

No. We're not using any mechanism to cause a programmed cell death as our construct does not, at any point, produce anything harmful to the general public/environment.

7. What safety training have you received (or plan to receive in the future)? Provide a brief description, and a link to your institution's safety training requirements, if available.

We have learnt the Biosafety Level 1 microbiological practices, like work with microbes safely in a Laminar Hood, wear gloves while handling dangerous chemicals. Equipment like used tips, plastic gloves, used plates, etc., while working with hazardous substances are discarded separately.

8. Under what biosafety provisions will / do you work?

a. Please provide a link to your institution biosafety guidelines.

We're following the guidelines laid down by Department of Biotechnology, Govt. of India as in http://dbtbiosafety.nic.in/home_ibsc.htm

b. Does your institution have an Institutional Biosafety Committee, or an equivalent group? If yes, have you discussed your project with them? Describe any concerns they raised with your project, and any changes you made to your project plan based on their review.

We have submitted a proposal of our project to the Institutional Biosafety Committee. This will be considered in the upcoming meeting of the committee.

c. Does your country have national biosafety regulations or guidelines? If so, please provide a link to these regulations or guidelines if possible.

Yes, Department of Biotechnology, Govt. of India has laid down Indian biosafety rules and regulations for all biotechnology research in the country: http://dbtbiosafety.nic.in/.

d. According to the WHO Biosafety Manual, what is the BioSafety Level rating of your lab? (Check the summary table on page 3, and the fuller description that starts on page 9.) If your lab does not fit neatly into category 1, 2, 3, or 4, please describe its safety features [see 2013.igem.org/Safety for help].

The lab has Biosafety Level rating as 1.

e. What is the Risk Group of your chassis organism(s), as you stated in question 1? If it does not match the BSL rating of your laboratory, please explain what additional safety measures you are taking.

Our chassis organism (E. coli DH5a) comes under risk group 1, which can be handled appropriately and safely by our lab (BSL rating 1).

Faculty Advisor Name:

Dr. Preeti Srivastava

Faculty Advisor Signature:

Preeti Srivastava