# iGEM 2013 Basic Safety Form

**Team name:** EPF_Lausanne

**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 (K 12) | DH 5 alpha | 1 | http://www.absa.org/riskgroups/bacteriasearch.php?genus=Escherichia&species=coli+%28K12%29 | See above |
| 2 | E.Coli (K 12) | MG 1655 | 1 | http://www.absa.org/riskgroups/bacteriasearch.php?genus=Escherichia&species=coli+%28K12%29 | See above |
| 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_I746908 | iGEM kit | E.Coli | 1 | arabinose promoter driving GFP |
| 2 | BBa_I13453 | iGEM kit | E.Coli | 1 | arabinose promoter driving GFP |
| 3 | BBa-J23119 | iGEM kit | E.Coli (DH5alpha) | 1 | pH-sensitive promoter |
| 4 | MMP2 | dpt of biological chemistry and molecular pharma. | Homo sapteus | 1 | encodes gelatinase |
| 5 | MMPG | Harvard medical school | Mus musculus | 1 | ecodes gelatinase |
| 6 | GelE | ATCC | Enterococcus fecalis (genomic DNA) | 2 | encodes gelatinase |
| 7 | Hya | ATCC | E.Coli (K12) MG 1655 | 1 | pH sensitive promoter driving GFP |
| 8 | CadAB | ATCC | E.Coli (K12) MG 1655 | 1 | pH sensitive promoter driving GFP |

*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?

E.Coli (K12) may cause irritation to the skin, eyes and respiratory tract. It also may affect kidneys. However team members and co-workers in our lab are young and healthy and aren't immunodeficient. The concentrations of bacteria used are also very small. Therefore the strain used (E.COli k12 RG1) does not represent a risk to the safety of lab members. Of course lab coats, glasses and gloves are

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

If released, risks to the safety of general public are different than risks to the lab members. This is due to the diversity of the general population compared to the population in the labs working in a confined environment . Indeed the elder and the younger ones are the priority when there is a risk for the general public. However the biological materials used in our project are RG 1 and thus risk is limited even with

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

Risks to the environement are mainly due to conjunction and transmission of the antibiotic resistant genes to wild type organisms. The key is to work in the lab with small quatities of E. Coli and lab coats. All our biological waiste is treated and inactivated. As a second security control our waiste is also burned to prevent any environemental contamination

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

A constant control by our biosecurity team and a restrained access to the labs avoid any intentional or mlicious misuse of our material. Also the material we are working with is not suitable for bioterrorism or armful for 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.)

In our own case switching from small-scale lab study to industrial production shouldn't be a problem per se. The quantity of bio material handled shouldn't add any new type of risk, as the bio material should be handled with the same care whether we treat small or huge quantities of it. The knowledge generated or the methods developed in our project, even when made public, can not be used to cause arm to people

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.

Our project doens't include design feautures to address safety risks. However our chassis is RG 1 and we are not using armful or dangerous biological materials. We also plan on doing a safety assesement of our project in order to study how could our project impact on workers in the lab, public and environement.

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 followed a presentation made by the biosafety team in EPFL. We also had references concerning biosafety to read and a questionnaire to fill (Vade mecum). The team followed a safety training. Good judgment and proper lab practices are necessary at all times.

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

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

http://sv-safety.epfl.ch
http://sv-safety.epfl.ch/files/content/sites/sv-safety/files/SAF_Rules_Vademecum_[E]-1.0a.pdf
http://polylex.epfl.ch/security

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.

DSPS: security and biosecurity in EPFL
http://securite.epfl.ch/safety-en
Yes DSPS. We discussed our project but no change had to be made regarding the biosafety.

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

http://www.admin.ch/opc/fr/classified-compilation/20100803/index.html
http://www.admin.ch/opc/fr/classified-compilation/19994946/index.html

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].

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.

1

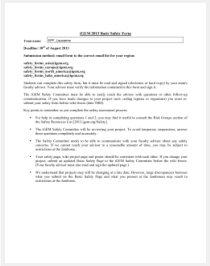
Faculty Advisor Name:

Stephane Karlen

Faculty Advisor Signature:

**Signature:** N.Paduwat (Aug 29, 2013)

**E-mail:** charlotte@rosewall.com



# IGEM_2013_Basic_Safety_Form

EchoSign Document History August 29, 2013

| | |
|---|---|
| Created: | August 29, 2013 |
| By: | charlotte.broennimann@epfl.ch |
| Status: | SIGNED |
| Transaction ID: | XY5PHFC596IXIXX |

## “IGEM_2013_Basic_Safety_Form” History

Document created by charlotte.broennimann@epfl.ch
August 29, 2013 - 5:08 AM PDT - IP address: 128.179.155.35

Document emailed to N.Paduwat (charlotte@rosewall.com) for signature
August 29, 2013 - 5:08 AM PDT

Document viewed by N.Paduwat (charlotte@rosewall.com)
August 29, 2013 - 5:09 AM PDT - IP address: 128.179.155.35

Document esigned by N.Paduwat (charlotte@rosewall.com)
Signature Date: August 29, 2013 - 6:25 AM PDT - Time Source: server - IP address: 128.179.155.35

Signed document emailed to N.Paduwat (charlotte@rosewall.com) and charlotte.broennimann@epfl.ch
August 29, 2013 - 6:25 AM PDT