

Los Angeles County Science & Engineering Fair
SRC Project Review Sheet
Tissues/Cell Lines/ Organs or Organ Parts

As you review the proposal online, check to make sure the proposal has the following items. If any items are missing or out of compliance, make a note of it in the comments section of the online page. Remember, you are only reviewing the project to make sure it complies with our rules – you are not reviewing whether the proposal is good science or the experimental design is sound. Keep all comments to compliance / non-compliance to our rules and make sure you are specific so the student knows what needs to be revised.

A. RESEARCH PLAN

- ____ 1. Problem
- ____ 2. Objective
- ____ 3. Hypothesis
- ____ 4. Number of students involved

B. TISSUE AND/OR CELL LINE DESCRIPTION AND SOURCE

- ____ 5. **Type** of tissue/cell line, organ and/or organ parts including genus, species and common name
- ____ 6. The **SOURCE** for the tissue/cell line, organ and/or organ parts
- ____ 7. **How** will the tissue/cell line, organ and/or organ parts **be collected?**
- ____ 8. **Location** of experimentation (in detail)
- ____ 9. **Reason** student requires these tissues for their project

C. DETAILED PROCEDURES

- ____ 10. Provides a **clear and detailed** description/outline of proposed procedure, including equipment to be used, safety measures, as well as location of experimentation
- ____ 11. Provides a clear and detailed description/outline of what the Supervisor will do
- ____ 12. Provides a **clear and detailed** description of specific institutional safety procedures for management of materials and protection of students used by student(s).
- ____ 13. Provides a **clear and detailed** description of specific institutional safety procedures for management of materials and protection of students used by adult(s).
- ____ 14. Intended disposal of bio-hazardous materials and/or tissue. Specify institutional procedures for management of materials (Protocol # is not sufficient).

RESEARCH INVOLVING TISSUES:

- ____ 15. Human blood/blood products/other bodily fluids is (are) **documented** as free of AIDS, Hepatitis or other pathogenic agents.
- ____ 16. **Teeth** shall be sterilized and certified free of blood and blood products.
- ____ 17. Human/vertebrate tissues will be obtained from an appropriate institute or Biomedical Scientist.
- ____ 18. Student will **NOT** be directly involved in the acquisition of blood or tissues.
- ____ 19. Experimental procedures involve a Biomedical Scientist or Designated Adult Supervisor.
- ____ 20. Experimental procedures will be **NOT** conducted in a home environment.
- ____ 21. All bodily fluids will be treated in the same manner as pathogenic or potentially pathogenic agents.
- ____ 22. For projects conducted at a research facility, student will follow standard tissue, cell line, organ or organ parts research practices as defined in **Biosafety in Microbial and Biomedical Laboratories (BMBL) published by CDC-NIH.**

____ 23. Procedure includes the sterilizing of materials at the end of the experiment.

D. BIBLIOGRAPHIC / CERTIFICATION REFERENCES

____ 24. Bibliographic References (a minimum of 3 references, not exclusively Internet)

Required verifications (check qualifications)

____ 25. Teacher/Advisor (required for **all** projects)

____ 26. Biomedical Scientist (required for all projects involving tissues and vertebrate animals)

____ 27. Certification by Person Providing Tissue/Cell Line Sample (required for projects involving tissue/cell lines samples)

____ 28. Designated Adult Supervisor (required for all projects involving tissue, cell lines, organs or organ parts; usually the Site Science Fair Coordinator)

Los Angeles County Science & Engineering Fair
SRC Project Review Sheet
HUMAN SUBJECTS

As you review the proposal online, check to make sure the proposal has the following items. If any items are missing or out of compliance, make a note of it in the comments section of the online page. Remember, you are only reviewing the project to make sure it complies with our rules – you are not reviewing whether the proposal is good science or the experimental design is sound. Keep all comments to compliance / non-compliance to our rules and make sure you are specific so the student knows what needs to be revised.

A. RESEARCH PLAN

- ___ 1. Problem
- ___ 2. Objective
- ___ 3. Hypothesis
- ___ 4. Number of students involved (how many students are doing the research)
- ___ 5. Age range, gender, and number of human subjects
- ___ 6. Risks addressed
- ___ 7. Location of experiment
- ___ 8. Provides a **clear and detailed** description/outline of proposed procedure, including equipment to be used as well as safety measures as indicated in the **Biological Data Handbook** (2nd Edition).
http://app.knovel.com/web/toc.v/cid:kpBDBVE00B/viewerType:toc/root_slug:biology-data-book-volumes/url_slug:biology-data-book-volumes/
- ___ 9. Student Researcher has minimized the **physical/psychological risk** to the human subject(s) in Research Plan Procedures.
- ___ 10. Student Researcher has considered risks related to **invasion of privacy** and possible breach of confidentiality.
- ___ 11. Student Researcher's will NOT publish or display information in a report that identifies the human subject(s) directly or in photos linked to the subject(s), without written consent
- ___ 12. Student Researcher plans to obtain information on human subjects from the Internet and will maintain appropriate confidentiality and obtain informed consent when appropriate.
- ___ 13. Student Researcher plans to observe and collect data for analysis of medical procedures medication administration and has the written consent of qualified professionals in their Research Plan.
- ___ 14. Student Researcher is NOT planning to administer medication, beverages or food products and/or perform medical procedures.
- ___ 15. Use of electrical current, laser beams, strong sounds or other **artificial stimuli** must not exceed what humans or their tissues can tolerate.
- ___ 16. Written consent from human subject(s) over the age of 18 has been waived.
- ___ 17. Human subject(s) will NOT be involved in an **abnormal educational practice**.
- ___ 18. Human subject(s) will NOT be involved in research involving **illegal public behavior**.
- ___ 19. Human subject(s) will NOT be involved in research that intends to **manipulate the subject(s) behavior *and poses a significant risk***.
- ___ 20. Surveys and questionnaires being used by Student Researcher has informed, written consent and does NOT violate human subject privacy or pose potential emotional distress.
- ___ 21. Human subject(s) will NOT be involved in a physical activity far greater than that ordinarily encountered in daily life, which may **pose harm or discomfort** to the subject(s).

B. HUMAN CONSENT FORM

- ___ 22. Purpose
- ___ 23. Procedures give detailed specifics of what the subject is being asked to do in the Consent form

- ____ 24. Time required for participation is addressed in the Consent form
- ____ 25. Risks to Human Subjects are detailed and Safety measures addressed
- ____ 26. Benefits to the Human Subjects for participating are detailed
- ____ 27. Confidentiality will be maintained
- ____ 28. Student researcher name as well as contact phone number and email are listed

C. BIBLIOGRAPHIC / CERTIFICATION REFERENCES – *check qualifications!*

- ____ 29. Teacher/Advisor (required for **all** projects)
- ____ 30. Biomedical Scientist (required for all projects conducted at a research facility)
- ____ 31. Designated Adult Supervisor (required for all projects involving human subjects; usually the Site Science Fair Coordinator)

Los Angeles County Science & Engineering Fair
SRC Project Review Sheet
VERTEBRATE ANIMALS

As you review the proposal online, check to make sure the proposal has the following items. If any items are missing or out of compliance, make a note of it in the comments section of the online page. Remember, you are only reviewing the project to make sure it complies with our rules – you are not reviewing whether the proposal is good science or the experimental design is sound. Keep all comments to compliance / non-compliance to our rules and make sure you are specific so the student knows what needs to be revised.

A. RESEARCH PLAN

- ___ 1. Objective
- ___ 2. Problem
- ___ 3. Hypothesis
- ___ 4. Number of students doing the research
- ___ 5. Type of vertebrates, species, age and number of animals (*note small sample size but do not reject project*)
- ___ 6. Vertebrate source
- ___ 7. Intended disposal of vertebrate animals (including post-research homes for live animals). Specify institutional procedures for management of animals.
- ___ 8. Cite evidence of search for alternative to vertebrate animal use.
- ___ 9. Provides a **clear and detailed** description of proposed procedure, including equipment to be used, safety measures, description of humane treatment of vertebrate animals.

B. RESEARCH INVOLVING VERTEBRATES (Check areas of non-compliance)

- ___ 10. Live or preserved animals will be acquired from an approved source and their care and use will be in compliance with local, state, and Federal laws.
- ___ 11. Student will **NOT** be involved in the sacrifice or euthanasia of a living vertebrate.
- ___ 12. Student will NOT induce **pain**, cause injury through other treatments, including, but not limited to, **toxicity studies, anesthetization or electric shock**, or develop **predator/prey experiments** where one animal is deliberately being encouraged to hunt and eat another animal, *for whatever reason*, to a vertebrate animal.
- ___ 13. Experiments involving **stress** will follow the guidelines for “Humane Treatment of Animals,” [CA Education Code Title 2, Division 2, Part 28, Chapter 4, Article 5, 51540](#), stay within normal stress limits for the species and NOT produce pathological lesions (diseased patches or cancers.)
- ___ 14. Any proposed experimental medication of animals will be done **ONLY** with appropriate adult supervision (this includes, but is not limited to: OTC & prescription drugs, pain killers, vitamins, caffeine, alcohol, and smoke from tobacco products).
- ___ 15. Student **WILL NOT** plan to withhold adequate food, water, or living space. Comfort is a prime concern.
- ___ 16. **Any accidental deaths** must be noted and investigated. If the procedure was responsible for the deaths, the experiment must have been immediately terminated.

C. BIBLIOGRAPHIC / CERTIFICATION REFERENCES- check qualifications!

- ___ 17. List Bibliographic References (a minimum of 3 references, not exclusively Internet).
- ___ 18. **Teacher/Advisor** (required for **all** projects)
- ___ 19. **Biomedical Scientist** (required for all projects involving vertebrate animals in a research setting)
- ___ 20. **Certification by Animal Care Supervisor** (required for all vertebrate animal projects)
- ___ 21. **Designated Adult Supervisor** (required for **all** projects involving vertebrate animals; usually the Site Science Fair Coordinator)

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SRC Project Review Sheet
HAZARDOUS MATERIALS (chemicals, activities or devices)

As you review the proposal online, check to make sure the proposal has the following items. If any items are missing or out of compliance, make a note of it in the comments section of the online page. Remember, you are only reviewing the project to make sure it complies with our rules – you are not reviewing whether the proposal is good science or the experimental design is sound. Keep all comments to compliance / non-compliance to our rules and make sure you are specific so the student knows what needs to be revised.

A. RESEARCH PLAN

- ____ 1. Problem
- ____ 2. Objective
- ____ 3. Hypothesis
- ____ 4. Number of students involved

B. PROCEDURE/EXPERIMENTAL TECHNIQUES

- ____ 5. List of chemicals and/or devices to be used in the procedure
- ____ 6. The source of hazardous materials and/or location of sampling
- ____ 7. Provides a **clear and detailed** description/outline of proposed procedure, including equipment to be used, safety measures, and disposal of hazardous chemicals, activities and/or devices as well as location of experimentation
- ____ 8. Provides a clear and detailed description/outline of what the Supervisor will do

C. SAFETY PRECAUTIONS (See “*Guidelines For Hazardous Materials Research And Safety Precautions*)

- ____ 9. Identify and assess the risks involved to humans and/or the environment for ALL hazards
- ____ 10. List the source(s) of safety information.
- ____ 11. Hazardous Chemicals were obtained from an appropriate Science Supply Store, College, Scientific Institution or Biomedical Scientist.
- ____ 12. If research is conducted in a school laboratory setting, standard safety precautions for handling hazardous chemicals or devices will be followed, as outlined in the *Science Safety Handbook for California Schools (2014)*.
<http://www.cde.ca.gov/pd/ca/sc/documents/scisafebook2014.pdf>
- ____ 13. Student will NOT directly buy or acquire hazardous chemicals themselves.
- ____ 14. All experimental procedures will involve a Biomedical Scientist or Designated Adult Supervisor.
- ____ 15. Only a qualified Biomedical Scientist or Adult Supervisor trained in the standards for their use will handle especially hazardous chemicals.
- ____ 16. Experimental procedures using hazardous chemicals will **NOT** be conducted at home.
- ____ 17. Student will use approved goggles, gloves and lab aprons when performing activities hazardous to the eyes or skin.
- ____ 18. Eyes and skin will not be exposed to ultraviolet light experimentally or accidentally as part of the project.
- ____ 19. Student will NOT use or handle ethidium bromide or gels stained with ethidium bromide.
- ____ 20. Student and Adult Supervisor must consult the appropriate **Safety Data Sheets (SDS)** prior to use of any hazardous chemicals, high vacuum equipment, sound-generating equipment, heated oil baths, NMR equipment, UV lights, lasers and high-temperature ovens. *Note only class I and some class II lasers may be used- student must verify type.* <http://www.flinnsci.com/msds-search.aspx>
- ____ 21. Projects involving **radioisotopes** and/or **X-rays** must be overseen by a Radiation Safety Officer to ensure compliance with state and federal regulations.
- ____ 22. Student will not use controlled substances (drugs, chemicals, anesthetics, narcotics, etc.) that are regulated by the comprehensive Drug Abuse Prevention and Control Act of 1970.

- _____23. Student will NOT perform dangerous activities, such as being on a roof or igniting objects, using guns or gunpowder or launching rockets (*exception: model rockets propelled by air or water, or from a kit that uses a sealed propellant may be used while under the supervision of the teacher or adult supervisor.*)
- _____24. Describe the disposal procedures for hazardous chemicals or devices that will be used (in accordance with **SDS sheets**).

D. BIBLIOGRAPHIC / CERTIFICATION REFERENCES

- _____25. Bibliographic References (a minimum of 3 references, not exclusively Internet)

Required verifications (check qualifications)

- _____26. Teacher/Advisor (required for **all** projects)
- _____27. Biomedical Scientist (required for all projects involving hazardous materials conducted at a research facility)
- _____28. Designated Adult Supervisor (required for all projects involving hazardous materials; usually the Site Science Fair Coordinator)

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SRC Project Review Sheet
MICROBES (bacteria, molds, fungus, viruses, pathogenic Protozoans)

As you review the proposal online, check to make sure the proposal has the following items. If any items are missing or out of compliance, make a note of it in the comments section of the online page. Remember, you are only reviewing the project to make sure it complies with our rules – you are not reviewing whether the proposal is good science or the experimental design is sound. Keep all comments to compliance / non-compliance to our rules and make sure you are specific so the student knows what needs to be revised.

A. RESEARCH PLAN

- ___ 1. Problem
- ___ 2. Objective
- ___ 3. Hypothesis
- ___ 4. Number of students involved

B. MICROBE DESCRIPTION AND SOURCE

- ___ 5. Type of microbe(s), species (if known)
- ___ 6. Source of microbes and/or location of sampling (in detail)
- ___ 7. Location of culturing and experimentation

C. PROCEDURE/RESEARCH TECHNIQUES (or additional page(s))

- ___ 8. Provides a **clear and detailed** description of specific institutional safety procedures for management of materials and protection of students used by student(s).
- ___ 9. Provides a **clear and detailed** description of specific institutional safety procedures for management of materials and protection of students used by adult(s).
- ___ 10. Description of culture medium to be used. Petri dishes that are inoculated with materials containing unknown microorganisms (i.e., the material might not be a pure non-pathogenic culture) must not contain blood agar or Brain Heart Infusion (BHI) Broth, *(unless used in a research facility)*
- ___ 11. Description of method and timing of sealing petri dishes
- ___ 12. Description of disposal method(s) to be used for hazardous materials, **in detail**

D. SAFETY PRECAUTIONS (See “*Guidelines For Microbial Research And Safety Precautions*)

- ___ 13. Microbes were obtained from an appropriate Science Supply Store, College, Scientific Institution OR Biomedical Scientist.
- ___ 14. Microbes will be collected from the environment and/or stored in an safe manner, with safety precautions outlined in the *Science Safety Handbook for California Schools* (2014.)
<http://www.cde.ca.gov/pd/ca/sc/documents/scisafebook2014.pdf>
- ___ 15. Student will NOT be directly involved in the acquisition of microbes *(exception: microbe collection in the environment using sterile swabs and appropriate collection techniques.)*
- ___ 16. Research procedures will involve a Biomedical Scientist or Designated Adult Supervisor.
- ___ 17. If research is conducted at an institutional setting like a college or hospital, standard microbial practices will be followed as defined in Biosafety in Microbial and Biomedical Laboratories (BMBL) published by CDC-NIH.
<http://www.cdc.gov/biosafety/publications/bmb15/BMBL.pdf>
- ___ 18. Experimental procedures will **NOT** be conducted in a home environment.
- ___ 19. Experimentation with molds and other fungi *must take place under a fume hood or an open-air area.*
- ___ 20. Procedure **DOES NOT** intend to produce bacteria with multiple antibiotic-resistance; single antibiotic resistant bacteria must also be *auxotrophic* (unable to survive unless they're grown on special medium.)

- _____ 21. Procedure involving existing resistant microorganisms will **NOT** be performed at home or in a school, but at a research institution.
- _____ 22. Procedure for microbes cultured in disposable plastic petri dishes includes the use of biohazard disposal bags and District pick-up of bags as hazardous waste
- _____ 23. Procedure for microbes cultured in glass petri dishes involves the careful autoclaving or pressure-cooking of microbes at the end of the experiment before disposal.
- _____ 24. Materials used in culturing and lab countertops will be sterilized with 10% bleach.

E. BIBLIOGRAPHIC / CERTIFICATION REFERENCES- check qualifications!

- _____ 25. Bibliographic References (a **minimum of 3 references**, not exclusively Internet)
- _____ 26. Teacher/Advisor (required for **all** projects)
- _____ 27. Biomedical Scientist (required for all projects involving microbes conducted at a research facility)
- _____ 28. Person Providing Microbial Sample (required for projects involving microbes NOT collected in the environment)
- _____ 29. Designated Adult Supervisor (required for all projects involving microbes; usually the Site Science Fair Coordinator)