

Texas A&M University – Corpus Christi  
FACILITY SAFETY PLAN

**A) Research Operations/Standard Operating Procedures (SOPs)**

Texas A&M University – Corpus Christi (TAMU-CC), by formal Memorandum of Understanding, provides certification and assurances for research and educational projects at TAMU-CC. A TAMU-CC Research Compliance approval system (including the Institutional Review Board for Human Studies, Conflict of Interest Committee, and Institutional Animal Care and Use Committee) has been established and applicable research study applications are approved during periodic meetings. Each study is reviewed annually and given continuation approvals as necessary. TAMU-CC has developed the Institutional Biosafety Committee and Export Controls Committee which are pending approval by university administration. The TAMU-CC Environmental, Health and Safety Department is responsible for conducting TAMU-CC Laboratory Safety Inspections, and the Environmental, Health and Safety Committee has been established to a) work to ensure that environmental and safety considerations are integrated and embedded into University functions, processes, and activities; b) make assessments of safety needs; c) provide the organization and impetus to facilitate integration of sound environmental and safety practices; and d) develop and propose environmental and safety rules to comply with laws and policies.

Descriptions of the standards that support safety procedures at TAMU-CC are as follows:

- Standard Operating Procedures and policies are in place, which specifically address safe research operations at TAMU-CC. Each research lab is responsible for establishing protocols, standard operating procedures, and training materials to address the unique needs of each lab. Samples of documents are available upon request from the Research Compliance Office.
- Environmental, Health and Safety Department, which functions as part of the Finance and Administration Division, has been established and is responsible for coordinating safety activities in the research laboratories;
- Institutional Biosafety Committee TAMU-CC follows the guidelines set forth by the NIH for Research Involving Recombinant DNA Molecules. The level of biosafety research at TAMU-CC is minimal and not federally funded. The IBC has been formed and is pending administrative approval to develop university procedures in preparation for future biosafety research. Each research lab is responsible for establishing protocols, standard operating procedures, and training materials to address the unique needs of each lab. Samples of documents are available upon request from the Research Compliance Office.
- A Material Safety Data Sheet (MSDS) site addresses material safety data sheet information at <http://safety.tamucc.edu/index.php?n=Site.MSDS>;

- The Health Information Site includes information pertaining to the Blood-borne Pathogen Program/Policy and reference to biological materials that may be used in the research at <http://safety.tamucc.edu/index.php?n=Site.Health>;
- In-Person, Online, and Specialized Training Sessions are available for the university community through the Environmental, Health and Safety Department on topics such as Hazardous Material Release Response, Chemical Hygiene, Hazard Communication, etc.; and
- The Research Compliance Office assists investigators with compliance and training respective of the above listed safety issues and policies.

College Deans/Center Directors are responsible for Safety Measures within their college or center in compliance with Texas A&M University – Corpus Christi’s Environmental, Health and Safety Department guidelines

(<http://safety.tamucc.edu/index.php?n=Main.HomePage>) and Office of Research Compliance guidelines (<http://research.tamucc.edu/compliancenenew2.html>). Laboratory Coordinators are employed by the colleges and centers to ensure compliance with all applicable guidelines. Lab personnel work with the Environmental, Health and Safety Department and the Research Compliance Office to ensure the implementation of appropriate safety and compliance measures relating to biological safety, chemical safety, safety training, and risk assessment. Safety and compliance are verified through Environmental, Health and Safety Department and Research Compliance inspections.

### Chemical Hazards

TAMU-CC complies with OSHA’s Hazard Communication Standard and all applicable federal, state, local, Texas A&M University System, and Texas A&M University – Corpus Christi regulations. All chemical materials must have risk assessment, detailing appropriate precautions for use, minimizing the risk, containment, any protective clothing requirements and the ultimate means of disposal of any product or residual material. Records are kept in each lab for all materials used in the lab, including a chemical hygiene plan, MSDS, etc. Lab inspection documentation is maintained by the Environmental, Health and Safety Department.

### Biological Safety and Genetically Modified Organisms

TAMU-CC follows the guidelines set forth by the Texas A&M University System (TAMUS) for biosafety research. TAMUS guidelines comply with NIH regulations for Research Involving Recombinant DNA Molecules. The level of biosafety research at TAMU-CC is minimal and not federally funded, and the university is currently forming an Institutional Biosafety Committee (IBC) in preparation for future biosafety research. All work involving biological agents at TAMU-CC must be prefaced by a suitable and satisfactory risk assessment. This must take into account the nature, associated hazards, minimum containment level, and any control measures necessary to minimize the risk.

### Radiation Protection

The TAMU-CC Standard Operating Procedure (SOP) for ionizing Radiation is maintained within the lab conducting the research involving ionizing Radiation. The SOP was created in

consultation with the Environmental, Health and Safety Department. The SOP is not published online and is available upon request.

The TAMU-CC Standard Operating Procedure (SOP) for non-ionizing Radiation is maintained within the lab conducting the research involving non-ionizing Radiation. The SOP is not published online and is available upon request.

The Environmental, Health and Safety Department conducts inspections of labs conducting ionizing and non-ionizing research and maintains all inspection documentation.

#### (b) Medical Surveillance and Support

Standard vaccines, including Hepatitis A and Hepatitis B vaccines, and standard protections, such as hearing protection, are available for all lab personnel through the Environmental, Health and Safety Department. TAMU-CC does not conduct research involving materials which could potentially require specific medical support. The university does acknowledge that when research requiring specialized medical support begins on campus, the Environmental, Health and Safety Department is prepared to implement a more thorough medical plan.

Chemical Hazards:

<http://safety.tamucc.edu/index.php?n=Site.MSDS>

Chemical Hygiene Plan:

[http://safety.tamucc.edu/uploads/Site/Chemical\\_Hygiene\\_Plan.pdf](http://safety.tamucc.edu/uploads/Site/Chemical_Hygiene_Plan.pdf)

The above items are classified as standards used by the TAMU-CC and are and will be overseen for quality assurance through meetings of various committees, including the Environmental, Health and Safety Committee. The committees address issues and recommend corrective actions and plans as appropriate. The various policies and procedures addressing safety and related issues are continually modified to address changes and safety and compliance issues.

### **B) Facility Equipment and Description (Related to the Research Environment):**

- 1) **Description of the Facility:** Texas A&M University – Corpus Christi, located in Corpus Christi, Texas, is part of the Texas A&M University System. The university is an expanding, doctoral-granting institution committed to preparing graduates for lifelong learning and responsible citizenship in the global community. TAMU-CC is dedicated to excellence in teaching, research, creative activity and service. The supportive, multicultural learning community provides undergraduate and graduate students with a challenging educational experience. The university's federal designation as a Hispanic Serving Institution (HSI) provides a foundation for closing educational gaps, while its strategic location on the Gulf of Mexico and on the cultural border with Latin America provides a basis for gaining national and international prominence. TAMU-CC is located on its own 240-acre semi-tropical island on the Gulf of Mexico. TAMU-CC has several research centers and institutes, including the Harte Research Institute

for Gulf of Mexico Studies. TAMU-CC supports research and education programs by providing facilities and human resources necessary for the humane care and treatment of animals used in scientifically appropriate programs, protection of human subjects participating in research, and all other applicable compliance and safety guidelines.

- 2) **Description of Personal Protection Equipment:** Personal Protective Equipment used within the facility include, but are not limited to goggles, gloves, laboratory aprons, and coats; and
- 3) **List of Specialized Safety Equipment:** Specialized safety equipment include but are not limited to fume hoods, biosafety cabinets, eye wash and showers, which are used in research labs and maintained by a variety of entities including the university's physical plant; colleges; research centers; and outside contractors.

Additionally the following plans have been developed to address each of the following areas:

- [Emergency Management Plan](#) (addresses both internal and external incidents, including notification procedures and training requirements)
- [Chemical Hygiene Plan](#) (addresses policies and programs to keep exposures to hazardous chemicals in laboratories at the lowest levels)
- [Hurricane Defense Plan](#) (addresses hurricane and tropical storm preparations and safety)
- [Personal Protective Equipment Plan](#) (addresses personal protective equipment (PPE) including all clothing and work accessories designed to protect employees from workplace hazards)

### **C) Radioactive Materials**

TAMU-CC does not conduct research involving radioactive materials at a level high enough to require licensing.

### **D) Hazard Analysis**

The Environmental, Health and Safety Department has implemented and maintains a [Hazardous Materials Information Site](#) that includes a variety of policies that directly relate to chemical use, storage and labeling practices, and chemical waste management procedures. Hazardous Chemical training is available every fall semester. The Environmental, Health and Safety Department conducts laboratory safety inspections and maintains all inspection documentation.

Individual MSDS forms are kept for all chemicals and procedures in use in the laboratory, including risk assessment, minimization of risk and control of risk to personnel. A complete list of all chemicals utilized in university laboratories is maintained by the Environmental,

Health and Safety Department as part of the university's Hurricane Defense Plan. A sample list is provided below. Individual assessments and the complete list maintained by the EH&S Department can be provided on request.

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| -47 Sequencing Primer<br>1 kb DNA ladder<br>1,5 Pentanedione<br>100 bp DNA ladder<br>100% DMSO<br>1M Tris HCl<br>20% SDS solution<br>2-Propanol<br>2-Propanone<br>50 mM MgCl <sub>2</sub><br>5M Sodium Chloride<br>5X GoTaq Flexi green buffer, MG free<br>5x Green GoTaq reaction buffer<br>AccuGENE 0.5 M EDTA, pH 8.0<br>AccuGENE 3M Sodium Acetate Solution<br>Agarose<br>Agarose, low EEO<br>Ammonium Acetate<br>AP3/E<br>Bacto Agar<br>Bacto Yeast Extract<br>Bacto-Peptone<br>Bacto-Tryptone<br>Binding Matrix<br>Bleach<br>BlueJuice Gel Loading Buffer<br>Borate<br>Brain Heart Infusion Agar<br>Brain Heart Infusion Broth<br>Bromocresol Purple<br>Bromothymol Blue<br>Buffer AE<br>Buffer AL<br>Buffer AP1<br>Buffer AP2<br>Buffer ATL<br>Buffer AW<br>Buffer AW1<br>Buffer AW2<br>Buffer EB<br>Buffer PB<br>Buffer PE | CCMP2F<br>CCMP2R<br>ccmp7F<br>Cellobiose<br>CEQ sample loading solution (SLS)<br>CEQ separation capillary array 33-75B<br>CLS -VF<br>CLS-TC<br>CLS-Y<br>Concentrated SEWS-M<br>Cox1MercF<br>Cox1MercR<br>Cresol Red<br>Crimson Taq DNA polymerase<br>DES<br>Dimethyl Sulfoxide<br>DNA gel loading buffer, 10 X<br>DNA sequencing gel<br>DNA Sequencing Separation Buffer<br>DNA size std. 400<br>DNA size std. 600<br>DNTP<br>Drierite<br>DTCS Quick start mix<br>E-gel 48 2% agarose gel<br>Elution Buffer<br>Equilibration Buffer<br>Ethanol, absolute<br>Ethidium Bromide<br>Ethyl Acetate<br>Ethyl alcohol<br>Ethyl Alcohol Pure (200 proof)<br>Ferric Chloride (box of 50)<br>FlashGel Cassette<br>FlashGel loading dye<br>Formaldehyde<br>gelplot loading dye<br>Glycerol<br>Glycogen | GoTaq colorless master mix, 100 reactions<br>Hexamethylenetetramine<br>Hydrochloric acid<br>Illustra hot start master mix<br>Indole (box of 50)<br>Indoxyl β-D-glucoside, 97%<br>Iso-Amyl Alcohol<br>Lambda DNA<br>LB Agar<br>Luria Bertani Miller Base<br>MacConkey Agar<br>Magnesium Chloride, anhydrous 99%<br>Marine Agar<br>Marine Broth<br>Methyl benzene<br>Mineral Oil<br>N, N-Dimethyl-1-naphthylamine<br>Nalidixic Acid<br>NTCP18F<br>NTCP18R<br>NTCP30F<br>NTCP30R<br>NTCP39F<br>NTCP40R<br>NTCP9F<br>NTCP9R<br>Oxidase (box of 50)<br>PBI binding<br>PCR nucleotide mix<br>Permout (55% Toluene)<br>pH indicator I<br>Phenol Red<br>Phosphate<br>Phusion High Fidelity DNA polymerase<br>Phytigel<br>Pluronic F-68<br>Potassium chloride<br>Potassium Phosphate<br>PPS<br>Propylene phenokytol<br>Proteinase K<br>QG solubilization<br>Reagent Alcohol, Absolute | Rnase A solution<br>Rosolic Acid<br>SFG I Buffer<br>SFG II Buffer<br>SFG III Buffer<br>Sodium Chloride<br>NTCP40R<br>NTCP9F<br>NTCP9R<br>Oxidase (box of 50)<br>PBI binding<br>PCR nucleotide mix<br>Permout (55% Toluene)<br>pH indicator I<br>Phenol Red<br>Phosphate<br>Phusion High Fidelity DNA polymerase<br>Phytigel<br>Pluronic F-68<br>Potassium chloride<br>Potassium Phosphate<br>PPS<br>Propylene phenokytol<br>Proteinase K<br>QG solubilization<br>Reagent Alcohol, Absolute<br>Rnase A solution<br>Rosolic Acid<br>SFG I Buffer<br>SFG II Buffer<br>SFG III Buffer<br>Sodium Chloride<br>Urea<br>Voges-Proskauer A (box of 50)<br>Voges-Proskauer B (box of 50)<br>water, nuclease free<br>Xylenes |
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Risk Assessments:

All work with radioisotopes

Use of Lasers

All work using Gas cylinders

Freezing down cells and tissues; storage of frozen materials

Use of UV

**E) Biological Defense Research Program Requirements**

This requirement is not applicable.

