

安全管理の取り組み

Initiatives in the Area of Safety Management

バイオリソースセンターでは、遺伝子組換え実験、放射線、高圧ガス、化学物質等の安全管理及び環境汚染防止など、法令遵守ならびに安全確保の観点から、また、動物実験、研究倫理に関しては法令遵守及び安全確保に加え、動物福祉、個人情報等の観点から各種実験等に係る申請手続き、関連施設・設備の維持管理及び法令等の周知、遵守のための教育訓練等を行い、適正な研究実施並びに職員の安全確保に努めています。

また、地域住民の理解を得ながら透明性のある事業運営を行うべく、研究所事業の安全確保及び環境保全に取り組み、毎年つくば市主催の地域住民への説明会においては安全管理状況等に関する情報の提供並びに意見交換を行なっています。

At the BioResources Center, because we engage in experiments using recombinant DNA, and utilize radiation, high-pressure gas, and chemical substances, we need to consider legal requirements and the assurance of safety from the perspective of safety management and the prevention of environmental contamination. In the area of animal experimentation and research ethics, in addition to legal requirements and safety concerns, we must take into consideration animal welfare, the privacy of personal information, and other issues. Given these requirements, we offer training to ensure that all of our personnel are aware of application procedures for experiments, procedures for the maintenance of facilities and equipment, the details of relevant laws and how to observe them, striving to ensure appropriate implementation of our research procedures and the safety of all our personnel.

In addition, we are working to ensure safety in our laboratory work and to protect the environment while conducting our activities transparently and with the understanding of the residents of the area in which our facility is located. To this end, every year we participate in an explanatory meeting organized by Tsukuba City, where we provide information on the status of our safety management and other important issues and exchange opinions with local residents.

1. 遺伝子組換え実験安全管理

(1) 実験課題

筑波研究所遺伝子組換え実験安全委員会による審査を経て、35課題(内大臣確認実験1課題)の計画を実施。

(2) 施設点検(安全キャビネット等)

安全キャビネットの風速・風量およびヘパフィルター性能試験を実施。

(3) 教育訓練の実施

遺伝子組換え実験開始前に実験従事者に対する教育訓練を実施。

1. Safety management for experiments with recombinant DNA

(1) Subjects of experiments

As a result of an audit by the Tsukuba Safety Control Committee for Recombinant DNA Experiments, plans for 35 experiments were drawn up (including one topic requiring ministry approval).

(2) Inspection of equipment (safety cabinets, etc.)

We conducted performance tests on the air speed, air flow rate and the HEPA filters in the safety cabinets.

(3) Education and training

We offered education and training to personnel before they commenced experiments using recombinant DNA.

2. 放射線安全管理

(1) 放射性同位元素使用計画書

平成21年度前期9課題・後期9課題を承認し、いずれの使用、保管状況等も適切であったことを確認。

(2) 放射性同位元素

筑波研究所で許可を得ている非密封放射性同位元素(H-3、C-14、P-32、P-33、S-35、Ca-45、Cr-51、Zn-65、I-125、I-131)のうち、平成21年度使用・保管はH-3、C-14、P-32、S-35。

(3) 放射線業務従事者登録および被ばく管理

放射線業務従事者に対し、個人被ばく線量の測定を実施。全て検出限界以下(被ばくなし)であることを確認。

(4) 放射性廃棄物

放射性廃棄物については、平成22年2月8日に日本アイソトープ協会へ引き渡し処分。

なお、液体シンチレーター廃液は、筑波研究所で法令に基づき焼却処理。

(5) 施設点検

放射線施設、設備等の定期点検を実施し、法令に定められた技術上の基準に適合していることを確認。

(6) 教育訓練の実施

放射線業務従事予定者への立入開始前教育訓練及び全放射線業務従事者を対象に再教育訓練を実施。

2. Safety management for use of radioactive substances

(1) Plans for use of radioactive isotopes

In fiscal 2009, we authorized nine experiments in the first half of the year and nine experiments in the second half of the year, and worked to ensure that the substances employed in these experiments were used and stored appropriately.

(2) Radioactive isotopes

The Tsukuba Institute is authorized to use the following unsealed radioactive isotopes: H-3, C-14, P-32, P-33, S-35, Ca-45, Cr-51, Zn-65, I-125, and I-131. Of these, in fiscal 2009 we used H-3,

C-14, P-32, and S-35.

(3) Registration of personnel using radioactive substances and exposure management

We monitored the level of exposure of personnel using radioactive substances. In all cases, the levels were below the detectable limit (i.e., personnel were not exposed to radiation).

(4) Radioactive waste

On February 8, 2010, we transferred our radioactive waste to the Japan Radioisotope Association for disposal.

Waste liquid from our liquid scintillator was incinerated at the Tsukuba Institute in accordance with legal requirements.

(5) Equipment inspections

We conducted periodic inspections of radioactive facilities and equipment, and ensured that it met the technical standards stipulated by the relevant laws.

(6) Education and training

We provided education and training to all personnel scheduled to commence working with radioactive materials prior to their entry to the radioactive laboratory, and we also provided refresher courses to all personnel working with radioactive materials.

3. 高圧ガス安全管理

(1) CEタンク(液化窒素)点検

高圧ガス保安法に基づく高圧ガス製造施設の定期自主検査を実施し、異常がないことを確認。

(2) 保安教育の実施

高圧ガス設備等を使用開始前に作業従事者に対し教育訓練を実施。

3. Safety management for use of high-pressure gases

(1) Inspection of CE tanks (liquid nitrogen)

In accordance with the High Pressure Gas Safety Act, we conducted voluntary periodic inspections of equipment used to produce high-pressure gas, and ensured that no malfunctions were occurring.

(2) Safety education

We provided education and training to personnel prior to working with high-pressure gas equipment, etc.

4. 環境汚染防止

(1) 排水処理

放射線管理区域から出る実験排水は、法令で定められた濃度限度以下であることを確認後、一般実験排水とともに除害処理及び下水道法及び県条例等に基づく有害物質等濃度測定を行い、同法令等で定められた基準値以下であることを確認の上、公共下水道へ放流。

(2) 研究廃棄物処理

実験により発生した固体廃棄物及び廃油、有機溶剤および無機廃液等を分別収集し、外部処理業者に産業廃棄物または特別管理産業廃棄物として引き渡し処分。

4. Prevention of environmental pollution

(1) Wastewater treatment

After ensuring that the radiation count of the wastewater discharged from the radiation controlled area was below the figure specified by law, we measured the concentration of harmful substances in this wastewater together with the wastewater discharged from normal experiments, based on the stipulations of laws pertaining to the treatment of harmful substances and sewage and prefectural regulations. Having established that the concentrations of harmful substances in the wastewater were below the levels stipulated by the relevant laws and regulations, we discharged it into the public sewage system.

(2) Disposal of research waste

We separated the solid waste, waste oil, organic solvents and inorganic waste, etc., produced by our experiments, and sent them to waste processors for disposal as industrial waste or industrial waste subject to special control.

5. 化学物質の安全管理

(1) 化学物質管理

毒物、劇物、向精神薬及び麻酔の保管状況について調査を実施。また、特定化学物質・有機溶剤に係る作業環境測定を実施。

(2) 講習会の実施

毒物、劇物、向精神薬及び麻酔の取扱い開始前に取扱者に対し教育訓練を実施。

5. Safety management for use of chemical substances

(1) Management of chemical substances

We conducted surveys concerning the status of management of poisonous and deleterious substances, psychotropic agents and anesthetics. We also conducted measurements in relation to specified chemical substances and organic solvents in our work environments.

(2) Training workshops

We conducted education and training programs for personnel scheduled to work with poisonous and deleterious substances, psychotropic agents and anesthetics.

6. 微生物等取扱安全管理

(1) 実験課題

微生物等取扱の届出数は、レベル1が13件、レベル2が7件。

(2) 教育訓練

微生物等の取扱い開始前に微生物等取扱者に対し教育訓練を実施。

6. Safety management for work with microbes, etc.

(1) Subjects of experiments

We conducted 13 experiments involving microbes at biosafety level 1 and seven experiments at biosafety level 2.

(2) Education and training

We provided education and training to all personnel who were scheduled to work with microbes.

7. 研究倫理

(1) 実験課題

筑波研究所研究倫理委員会(本委員会計1回、迅速審査委員会計1回)を経て、人を対象とする研究計画12件、ヒトES細胞使用計画1件(文部科学大臣宛届出)、ヒトES細胞分配機関設置計画1件(文部科学大臣確認)の課題が承認。

7. Research ethics

(1) Subjects of experiments

Tsukuba Research Ethics Committee met (one meeting of the full committee / one meeting of a provisional committee) and authorized 12 research plans with humans as subjects, one plan involving the use of human ES cells (notification made to the Minister of Education, Culture, Sports, Science and Technology), and one plan for the establishment of an institution for the distribution of human ES cells (approval received from the Minister of Education, Culture, Sports, Science and Technology).

8. 動物実験

(1) 実験課題

第9回筑波動物実験審査委員会を経て、実験計画新規・継続13課題、実験報告書13課題、実験施設新規・変更5件、施設廃止4件、飼育管理報告書6件が審議承認。

(2) 教育訓練の実施

動物実験従事者・飼育技術者登録予定者への教育訓練及び全動物実験従事者・飼育技術者に対し再教育訓練を実施。

(3) 実験動物慰霊祭の開催

8. Animal experiments

(1) Subjects of experiments

The 9th meeting of the Tsukuba Animal Experiment Supervisory Panel authorized 13 new and ongoing experiments, 13 reports concerning experiments, the placement or modification of five pieces of experimental equipment, the scrapping of four pieces of experimental equipment, and six reports concerning animal management.

(2) Education and training

We provided education and training to all personnel scheduled to be registered as animal experimenters or animal keepers, and we also provided refresher courses to all personnel working

as animal experimenters or animal keepers.

(3) We held memorial services for the animals used in experiments.

9. 施設見学案内

申し込みがあった41件の見学要請に応じ、P4施設の見学案内を実施。

9. Hosting facility visits

We guided visitors around our P4 facility in response to 41 requests.

10. 地元説明会

地元住民に対する説明会において筑波研究所の業務・活動内容等について報告。

10. Explanatory meetings for local residents

We provided details of the activities of the Tsukuba Institute at explanatory meetings for local residents.