

東京大学大学院医学系研究科・医学部

University of Tokyo

Graduate School of Medicine and Faculty of Medicine

生命科学系研究データ保存のガイドライン（第1版）

Guidelines for preserving data from life-sciences research

(Version 1)

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【要旨】 Summary

- 1 電子化された研究資料の保存期間は当該論文等の発表後 10 年間
Research documentation in electronic form is to be preserved for 10 years after publication of the academic paper, thesis, etc. to which it pertains.
 - ▶ 論文や学位など、研究成果発表のもととなった研究資料は電子化し、当該論文等の発表後教室内に 10 年間保存する。
Research documentation that is the basis of published research results, including academic papers, theses, etc., is to be put into electronic form and is to be preserved in the appropriate department for 10 years after publication of the academic paper, thesis, etc. to which it pertains.
 - ▶ 電子化した研究資料の作成日や分類等の付加情報（メタデータ）や研究試料等の情報は研究資料等保存内容証明書に記入し、再現可能な形で教室内に保管する。
Information pertaining to research documentation (including meta-data such as the type of research documentation in electronic form and its date of creation) is to be recorded on a form for certification of contents of preserved research documentation, etc., and is to be stored in the appropriate department to ensure reproducibility.
 - ▶ 研究資料等保存用ディスクや研究試料等の保管にあたっては外部の者がアクセスできないように厳重な管理を行う。
In the storage of research materials (objects other than documentation) and of disks for preserving research documentation, etc., great care is to be taken to prevent unauthorized third-party access.
- 2 ノートなど紙媒体の研究資料の保存期間は当該論文等の発表後 5 年以上
Notebooks and other paper-based research documentation are to be preserved for at least 5 years after publication of the academic paper, thesis, etc. to which they pertain.
 - ▶ 保管スペースの制約があるなど、やむを得ない事情がある場合は教室主宰者と協議を経て教室主宰者の責任により廃棄することを可能とする。
If there are storage-space limitations or similar unavoidable circumstances, then that paper-based documentation may be discarded, provided that the head of the department is consulted and fulfills his or her responsibilities.
- 3 研究試料や装置などの「もの」の保存期間は当該論文等の発表後原則 5 年間
Research materials (objects other than documentation), including research-related equipment and devices, are to be preserved for 5 years after publication of the academic paper, thesis, etc. to which they pertain.
 - ▶ 保存が困難なもの（不安定なもの、実験自体で消費されるもの）や保存に多大なコ

ストがかかるものはこの限りではない。

Exceptions may be made if preserving the item in question is very difficult to do (e.g., materials that are unstable or are consumed during the research itself), or if it is very costly.

4 教室主宰者が異動する場合の措置

What to do when the head of a department leaves (or in similar circumstances)

- 教室主宰者は、異動日の1ヶ月前までに研究資料等保存用ディスクと研究資料等保存内容証明書、研究資料等保管履歴簿を教室内から医学系研究科内の共通の保管場所へ移管する。

No less than one month before the head of a department leaves, the following items are to be moved from the department to the designated common storage place: the disks for preserving research documentation, etc., the certification(s) of contents of preserved research documentation, etc., and the storage log(s) of research documentation, etc.

- ただし、共通保管場所での保管期間は保管開始日から10年間とする。

Items stored in the common storage place are to be stored for 10 years starting on the date on which their storage began.

【用語の定義】

Definitions

- ・ 保存：そのままの状態に保つこと。

To preserve: To maintain in original condition

- ・ 保管：他者の物を預かって、保護・管理すること。

To store: To take charge of, safeguard, and manage something belonging to someone else

- ・ 電子化：紙の文書などを、コンピューターで使えるようデジタルデータにすること。

To put into electronic form: To convert the contents of paper documents etc. into digital form such that they can be used with computers.

- ・ データ：コンピューターで、プログラムを使った処理の対象となる記号化・数字化された資料。

Data: Documentation that has been converted into symbols or numerals such that they can be processed by a program in a computer.

- ・ 研究資料：PC等のハードディスク等の記録媒体に保存されている当該研究に関するデータならびに紙媒体資料（実験ノート等）のこと。

（日本学術会議「科学研究における健全性の向上について」（2015年3月6日）資料に準拠）

Research documentation (Note: This is referred to below as RD): Research-related data that have been preserved on recording media such as, for example, the hard disk of a personal computer, and also research-related papers such as laboratory notebooks, etc.

(Conforming to the Science Council of Japan's document (in Japanese) on improving the integrity of scientific research, dated March 6, 2015:

<<http://www.scj.go.jp/ja/info/kohyo/pdf/kohyo-23-k150306.pdf>>.)

- ・ 研究試料（もの）：反応性物質や生物試料、貴重な標本等の劣化するものや標本ならびに安定物質など劣化しないものこと。

（日本学術会議「科学研究における健全性の向上について」（2015年3月6日）資料に準拠）

Research materials (objects other than documentation): These comprise both objects that may be degraded (i.e., that are perishable), including reagents and biological specimens, valuable samples, etc., and also samples, stable materials, etc. that are relatively non-degradeable (relatively non-perishable).

(Conforming to the Science Council of Japan's document (in Japanese) on improving

the integrity of scientific research, dated March 6, 2015:

<<http://www.scj.go.jp/ja/info/kohyo/pdf/kohyo-23-k150306.pdf>>.)

- ・ 研究データ：電子化された研究資料。

Research data: RD that has been put into electronic form.

- ・ 保存用研究データ：保存用に電子化された研究資料。

Research data to be preserved (research data for preservation): RD that has been put into electronic form so that it may be preserved.

- ・ 研究資料保存用ディスク：教室内で保存用研究データを保存する DVD あるいは Blu-ray ディスクのこと。

Disks for preserving RD: DVD or Blu-ray disks being used to preserve research data for preservation in a given department.

- ・ 研究資料等保存内容証明書：研究データ保存用ディスクに保存した研究資料、保存できなかった研究資料等や研究装置名、他機関や他部局との共同研究の場合には研究成果に応じ共同研究者と相談等を行い適切な内容を記載する書類。

Certification(s) of contents of preserved RD, etc.: This refers to documents certifying the contents of RD preserved on a disk for preserving research data, any contents of RD, etc., that could not be preserved, and the model names of research equipment, etc. In the case of research done in collaboration with other units within the University or with other institutions, the contents of these documents are to be decided through consultation with the collaborating researchers, taking into account the results of the research.

- ・ 研究資料等保管履歴簿：教室内での研究資料等の保管日、保管者、所在等の履歴を記載した保管履歴簿。

Storage log of RD, etc.: This refers to a document on which are recorded the date(s) on which RD, etc. were stored, the person(s) who stored them, the location(s) of storage, etc., in a given department.

- ・ 研究資料等保管担当者：研究資料保存用ディスクおよび研究資料等保存内容証明書、保管簿を教室内で保管する担当者。

Person in charge of storing RD, etc. (Note: This person is referred to below as the Archivist): The Archivist is the person in a given department who is in charge of the following items: disks for preserving RD, certifications of contents of preserved RD, etc., and storage logs.

- ・ 責任著者：Corresponding author が定義されている場合にはそれを指し、Corresponding author が定義されていない場合には論文に関わるプロジェクト代表、もしくは代表に準ずる共同研究者を指すこととする。

Responsible author: For a given academic paper, etc., if a corresponding author has been designated, then the responsible author is that person. If a corresponding author has not been designated, then the responsible author is either the contributing researcher who is the representative of the project with which that academic paper, etc. is concerned, or the contributing researcher who fulfills the role of that representative.

I. はじめに

Introduction

研究成果発表に用いたデータや実験ノート等の研究資料、試薬等の研究試料、実験装置の情報等（以下研究資料等）を保存する最大の目的は研究成果の再現性や反証可能性の確保という科学的方法における要請であり、それはひいては研究者・学生自身を守ることに通じる。

The main reason for preserving research-related information (that is, RD including data, notebooks, etc. used for published research results, and also research-related materials such as reagents, etc., as well as equipment and devices used in experiments, which is referred to collectively in this document as “RD, etc.”) has to do with scientific method: to ensure that research results can be reproduced or invalidated. Another reason is to protect researchers and students.

そこでここに研究者・学生、教室主宰者、研究科長の研究資料等の保存や保管の基本的責務を明確にし、生命科学系における研究資料等の保存や保管の期間及び方法についてガイドライン（第1版）としてまとめることとした。

Thus, these guidelines (version 1), including coverage of durations and methods for storing and preserving RD, etc., have been compiled to clarify basic obligations for storing and preserving RD, etc., principally with regard to researchers and students, heads of departments, and Deans (including heads of research institutes) in the life sciences at the University of Tokyo.

II. 関係者の基本的責務

Basic obligations of the people concerned

1) 研究者・学生の基本的責務

Basic obligations of researchers and students

研究資料等の保存は、それらを生み出した研究者・学生自身が主たる責任を負う。

The primary responsibilities for preserving RD, etc. are to be fulfilled by the researchers and students who themselves have produced them.

公的な資金によって実施された研究で生み出された成果やそのもととなる研究資料等は公的資産としての性格も有することから、それらを適切に保存することは、研究者・学生に課せられた責務である。

Researchers and students are obligated to appropriately preserve the results of research done with public funds, together with the RD, etc. on which those results are based, because all of them are public assets.

第一著者、或いは第一著者が責任著者でない場合には責任著者、もしくは責任著者が指名した共著者は、論文が受理された日（学位論文の場合には学位授与日）以降速やかに論

文に関する研究資料を電子化し、研究資料保存用ディスクに保存し、研究資料等内容証明書に必要事項を記入した後、両者を教室内の所定の場所に保存するものとする。

As soon as possible after an academic paper, thesis, etc. has been accepted for publication (for theses, as soon as possible once the academic degree has been awarded), the first author (or the responsible author if that person is not the first author), or a co-author designated by the responsible author, is obligated to ensure that all RD, etc. associated with that paper, thesis, etc. are put into electronic form and are preserved on an appropriate disk for preserving RD. That person is also obligated to ensure that the required information about that RD, etc. has been recorded in the appropriate document (Certification of contents of preserved RD, etc.), and that both the disk and the document are then preserved in the designated place in the department concerned.

責任著者が他機関の研究者の場合は、責任著者と保存場所について相談し、保存場所を決定する。

If the responsible author is affiliated with an outside institution, then the decision about the place of preservation should be made in consultation with the responsible author.

2) 教室主宰者の基本的責務

Basic obligations of heads of departments

教室主宰者は自らのグループの研究者の転出や退職および学生の卒業に際して、当該研究者や学生の研究活動に関わる研究資料等のうち保管すべきものについて、(a)教室内で適切な形態で保管する、ないしは、(b)所在を確認し追跡可能としておく、などの措置を講ずる責務を有する。

When researchers leave a research group (due to a move to another group, resignation, retirement, etc.) and when students graduate, the head of the department is obligated to identify all RD, etc. related to that person's research activities that should be stored and preserved, and is obligated either (a) to store those materials in the department or (b) to verify the new location of that researcher or student, to ensure that follow up and further study are possible.

教室主宰者自身が異動する場合、医学系研究科がこれら研究資料等を保管出来るよう適切に共通保管場所へ移管するか、または、教室主宰者自身が責任を持ってこれら研究資料等を保存するとともにその内容を研究資料等保存内容証明書に記載し、研究資料等保管履歴簿に異動先を記入した後研究科長に届け出るものとする。

When the head of a department leaves, either (a) the Graduate School of Medicine will move the relevant RD, etc. to an appropriate common storage place, or (b) the department head who is leaving will fulfill the responsibilities of preserving the relevant RD, etc. and will also record its contents in an appropriate document (Certification of contents of preserved RD, etc.), record in an appropriate document (Storage log of RD, etc.) the

location to which that RD, etc. has been moved, and then transmit both of those (the certification and the storage log) to the appropriate graduate-school Dean or research-institute head.

3) 研究科長の基本的責務

Basic obligations of graduate-school Deans and research-institute heads

公的な資金によって実施された研究で生み出された成果やそのもととなる研究資料等は公的資産としての性格も有することから、それらを適切に管理・保存し、必要に応じて開示することは、研究科長に課せられた責務である。

Graduate-school Deans and research-institute heads are obligated to appropriately preserve, store, and, as necessary, disclose the results of research done with public funds, together with the RD, etc. on which the results are based, because those results, etc. are public assets.

また、研究科長は、教室主宰者の転出や異動に際してこれら研究資料等の保存や保管に関する措置を円滑に進めるために、研究資料等の保存や保管、所在確認等について適切な管理を行うための倫理教育等を研究者・学生に周知徹底する。

To ensure that appropriate measures for storing and preserving RD, etc. are smoothly implemented at the time of a move or transfer of the head of a department, each graduate-school Dean and research-institute head will inform researchers and students, through ethics training etc., about appropriate methods for storing, preserving, and locating RD, etc.

III. 保存を義務付ける対象、保存期間、保存方法

What is to be preserved, for how long, and by what methods

図1に生命科学系研究に関連する研究資料等の概要と表1にその類型と保存法を示す。

Figure 1 summarizes the kinds of RD, etc. relevant to life-sciences research, and Table 1 shows their classification and methods for their preservation.

IV. 研究資料の保存、保存期間、保存方法

Preservation of RD, including the durations and methods of that preservation

1) 紙媒体資料（実験ノート等）の取扱い

Handling of paper-based documentation (research notebooks, etc.)

東京大学大学院医学系研究科・医学部における生命科学研究分野では教室が所有権を有するノート等の紙媒体の研究資料は当該論文等の発表後5年以上保存することとする。

Paper-based notes, notebooks, and other paper-based RD owned by departments specializing in life sciences at the Faculty of Medicine and Graduate School of Medicine of the University of Tokyo are to be preserved for at least 5 years after publication of the

thesis, research paper, or other document to which they pertain.

保管スペースの制約など止むを得ない事情がある場合には、教室主宰者と協議を経て教室主宰者の責任により廃棄することも可能とする。

If there are storage-space limitations or similar unavoidable circumstances, then that paper-based documentation may be discarded, provided that the head of the department is consulted and fulfills his or her responsibilities.

実験・観察をはじめとする研究活動においては、その過程を実験ノートなどの形で記録に残すことが強く推奨される。

Recording research activities and procedures including experiments, observations, etc., in research notebooks, etc., is strongly recommended.

実験ノートには、実験等の操作手順やデータ取得の条件等を、後日の検証等が可能なよう十分な情報を記載し、かつ事後の改変を許さない形で作成し、研究活動の一次情報記録として適切に保管しなければならない。

Research notebooks (etc.) should contain enough information about the timing of procedures used in experiments, about the conditions under which data were collected, etc., so that such information can be verified and can be used again at a later date. Records must be stored in a way appropriate to their status as the primary sources of information about research activities.

2) 記述データの取扱い

Handling of researchers' records (digitized data)

論文や学位等、研究成果発表のもととなった研究計画、研究経過、研究報告、論文校正原稿等をデジタル化した記述データは後日の検証等に堪えるよう適正な形で保存しなければならない。

Digitized records (including plans, procedures, reports, drafts and proofs of academic papers, etc.) on which theses, academic papers, and other reports of research results are based must be stored in such a way that they can be verified and can be used at a later date.

これらの記述データの保存期間は、原則として、当該論文等の発表後 10 年間とする。

In principle, these digitized records are to be preserved for 10 years after publication of the thesis, research paper, or other document to which they pertain.

これらの記述データに関する作成日や分類等の付加情報（以下メタデータ）を整理・管理し、適切にバックアップを作成し再現可能な形で保存しなければならない。

Meta-data regarding these digitized records (including dates of creation, classifications, etc.) are to be organized and managed, backups are to be made, and all of those meta-data are to be preserved so that the digitized records permit reproducibility.

3) 生データの取り扱い

Handling of raw data

論文や学位等、研究成果発表内容の再現や反証可能性の証明に必要な生データの保存に関しては、後日の参照等が可能となるように、当該論文等の発表後 10 年間保管する。

To ensure preservation of the raw data that would be needed to reproduce or to invalidate the contents of presentations, and the research results published in theses, research papers, or other documents, those data are to be stored for 10 years after publication of the thesis, research paper, other document, or presentation to which they pertain.

また、メタデータの整備や検索可能性、追跡可能性の担保に留意すべきである。

Attention should also be paid to providing meta-data, to making meta-data searchable, and to ensuring that follow up is possible.

ただし、保存・保管が本質的に困難なものについては、教室主宰者と協議を経て教室主宰者の責任により合理的な範囲で廃棄することも可能とする。

However, if preserving or storing those raw data is inherently difficult, then those raw data may, within reasonable limits, be discarded, provided that the head of the department is consulted and fulfills his or her responsibilities.

4) ダウンロードデータ等外部から取得した電子データの取扱い

Handling of downloaded data and other electronic data acquired from external sources

論文や学位等、研究成果発表内容の再現や反証可能性の証明に必要なダウンロードデータの保存に関しても、当該論文等の発表後 10 年間保存する。

As for downloaded data that would be needed to verify the reproducibility or invalidation of the contents of presentations, and of the research results published in theses, research papers, or other documents, those downloaded data are to be stored for 10 years after publication of the thesis, research paper, other document, or presentation to which they pertain.

また、後日の利用/参照が可能となるようにメタデータの整備や検索可能性、追跡可能性の担保に留意すべきである。

Attention should also be paid to providing meta-data, to making meta-data searchable, and to ensuring that follow up is possible, so that those downloaded data can be used or referred to at a later date.

ただし、保存や保管が本質的に困難なものについては、教室主宰者と協議を経て教室主宰者の責任により合理的な範囲で廃棄することも可能とする。

However, if preserving or storing those downloaded data is inherently difficult, then those downloaded data may, within reasonable limits, be discarded, provided that the head of the department is consulted and fulfills his or her responsibilities.

5) デジタル化された研究資料の保管上の留意点

Points to keep in mind with regard to storing digitized RD

インターネットに接続されている端末あるいはハードディスクを研究データ保存用として使用する場合には、適切な情報セキュリティ対策が講じられていることを必須条件とする。

If a terminal or a hard disk used to preserve research data is connected to the Internet, then appropriate information-security measures must be taken.

また、ハードディスクは約5年を過ぎると障害を来す確率が高くなるのでDVDやBlu-rayディスクなどの耐久性の高いメディアへのバックアップを行い、適切に保管することが望ましい。

Because the risk of data loss from hard disks increases after about 5 years, backups on DVDs, Blu-ray disks, or similar highly-durable media should be made when needed and appropriately stored.

V. 研究試料および実験装置等の保存、保存期間、保存方法

Preservation of research materials and research-related devices, etc., including the durations and methods of that preservation

研究試料(実験試料、標本)や装置など「もの」の保存に関しては、当該論文等の発表後5年間保存することを原則とする。

In principle, research materials (such as materials used in experiments, and specimens) and also devices and other such items and equipment used in research (objects other than documentation) are to be preserved for 5 years after publication of the thesis or research paper or other document to which they pertain.

ただし、保存や保管が本質的に困難なもの(例:不安定物質、実験自体で消費されてしまう試料)や、保存や保管に多大なコストもしくはスペースを必要とするもの(例:生物系試料)についてはこの限りではない。

Exceptions may be made if storing and preserving the item in question is inherently very difficult to do (e.g., materials that are unstable or are consumed during the research itself), or if cost or space requirements are prohibitive (e.g., biological specimens).

VI. その他

Others

個人データ等、その扱いに法的規制等があるものや倫理上の配慮を必要とするものについては、それらの規制等に従う。

If the handling of the materials or documentation in question has ethical consequences or is regulated by law (e.g. personal data), then the applicable regulations, etc. shall be followed.

また、特定の研究プロジェクトに関して研究資料等もしくは成果物等の取扱いについて資金提供機関もしくは研究資料等の提供機関との取り決めや契約等がある場合にはそれに従う。

It may be necessary to handle the RD or other products of some research projects in accord with agreements, contracts, etc. made with funders or with the providers of RD, etc., and in such cases those agreements, contracts, etc. shall be adhered to.

Addenda

※1 本ガイドラインは、学術論文については東京大学大学院医学系研究科・医学部の生命科学系関連分野の研究者が責任著者の場合、学位論文については学位取得者が東京大学大学院医学系研究科・医学部生命科学系関連分野等に所属する場合に適用する。

(1) These guidelines apply to academic papers, etc. on which a researcher affiliated with a life-science department at the University of Tokyo is the responsible author, and also to theses for academic degrees written by degree recipients affiliated with a life-science department at the University of Tokyo.

※2 他機関の研究者が責任著者である共同研究の成果は、共同研究者と相談のうえ、他機関もしくは東京大学などで保存する。

(2) Results of collaborative research for which the responsible author is a researcher affiliated with an institution other than the University of Tokyo are to be preserved either at the other institution or at the University of Tokyo, and the decision about the storage site shall be made in consultation with the collaborating researcher(s).

※3 個人データなどその扱いに法的規制があるものや倫理上の配慮を必要とするものはそれらの規制やガイドラインに従う。

If the handling of the materials or documentation in question has ethical consequences or is regulated by law (e.g. personal data), then the applicable regulations or guidelines shall be followed.

特定の研究プロジェクトに関して成果物の取り扱いに資金提供機関との取り決めや契約等がある場合はそれに従う。

It may be necessary to handle the products of some research projects in accord with agreements, contracts, etc. made with funders, and in such cases those agreements, contracts, etc. shall be adhered to.

※4 社会科学分野の調査データや、臨床分野の診察データ、ヒトのゲノム情報などデータの扱いに法的な規制があるものや倫理上の配慮を必要とするもの、知的財産権が関係するものについては、必要に応じて別途定める。

(4) If the handling of the items in question has ethical consequences or is regulated by law (social-sciences research survey data, clinical data, human genome information, etc.), or if intellectual property rights are involved, then separate provisions shall be made as needed.
附属病院における臨床研究の資料の保存期間は5年とする。

Documentation related to clinical research at a University-affiliated hospital is to be preserved for 5 years.

※5 本ガイドラインは平成28年4月1日以降に受理された学術論文から適用する。

(5) These guidelines apply to all academic papers, reports, etc. accepted on or after April 1, 2016.

学位論文は学位授与日を発表日とする。

Theses for academic degrees are deemed to have been presented on the date on which the academic degree is awarded.

図表

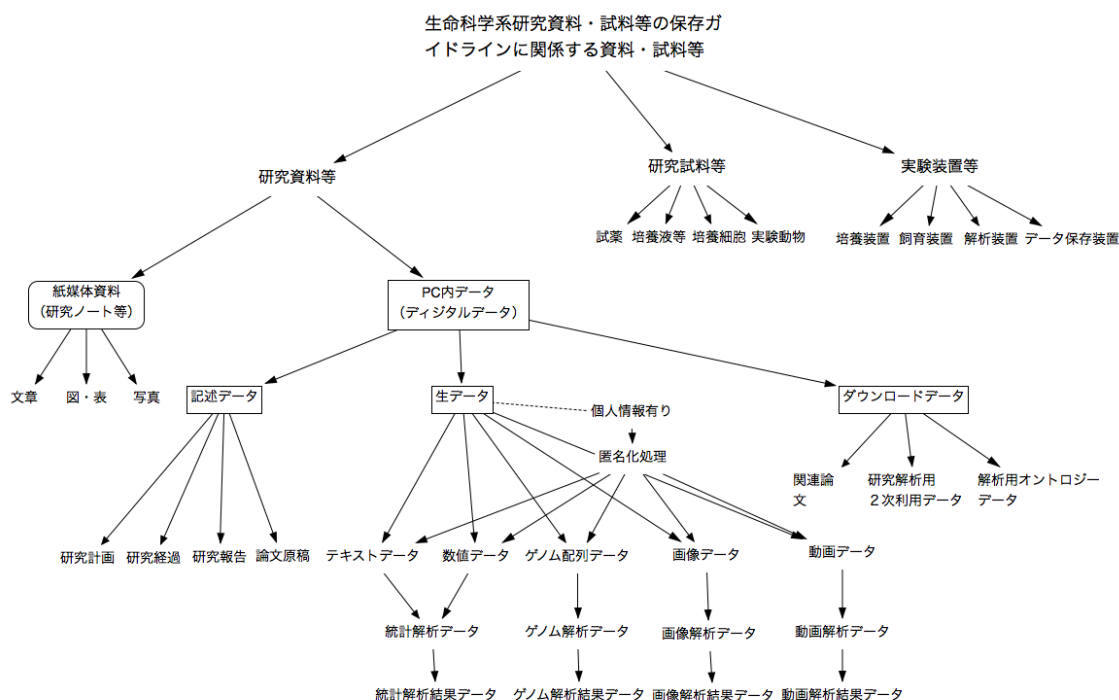


図 1. 生命科学系研究資料・試料等の保存ガイドラインに関する資料・資料等の概要図

表 1 研究資料／試料の種類と保存法

	データ等の種類	形式・形態	保存方法	検索／再利用の利便性	保存に要するスペース	保存にかかるコスト
資料 (情報、データ)	デジタルデータ	電子データ	ハードディスク等記録媒体	メタデータが完備していれば容易	小	低
	アナログ資料	紙媒体資料等	ファイリング等	整理・保管方法による	分量による	比較的low
試料等 (もの)	劣化しないもの	安定物質、標本等	単純収納	整理・保管方法による	分量による	比較的low
	劣化するもの、保存に特別な措置を要するもの	不安定物質、反応性物質、生物試料、貴重標本等	特殊環境での収納	保存方法による	特殊設備等を要する	高

参考資料 日本学術会議「科学研究における健全性の向上について」2015年3月6日より

Table 1. Types of research-related materials, specimens, etc., and methods for their storage and preservation

	Type of data, etc.	Form or format	Method for storing and preserving	Convenience of searching and using	Space needed for storage and preservation	Cost of storage and preservation
Information, data, documents & other such materials	Digital data	Electronic data	Recording media, including hard disks, etc.	Very easy, if complete meta-data are provided	Little	Low
	Analog documents	Paper-based materials, etc.	Filing, etc.	Depends on the method of organization and management	Depends on the amount	Relatively low
Samples, specimens, equipment, devices, etc.	Non-degradable (non-perishable) objects	Stable substances and samples, etc.	Simple storage (no special measures)	Depends on the method of organization and management	Depends on the amount	Relatively low
	Degradable (perishable) objects, items requiring special devices for storage	Unstable substances, reactive substances, biological specimens, valuable samples, etc.	Storage in a special environment	Depends on the storage method	Depends on the special equipment, etc. used	High

Source: The Science Council of Japan's document on improving the integrity of scientific research (April 6, 2015);

<<http://www.scj.go.jp/ja/info/kohyo/pdf/kohyo-23-k150306.pdf>> (in Japanese); accessed on July 27, 2015.

附則

Additional notes

- 1). 本ガイドラインは 28 年 4 月 1 日より施行する。
1. These guidelines take effect on April 1, 2016
- 2). 本ガイドラインの具体的手順については、別途運用手順書にて定める。
2. These guidelines are to be implemented according to the procedures described in the separate document called “University of Tokyo, Faculty of Medicine and Graduate School of Medicine, Procedures for storing and preserving research documentation, etc., (Draft)”.