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EMBL RULES OF GOOD SCIENTIFIC PRACTICE

EMBL RULES OF PROCEDURE IN CASES OF SUSPECTED SCIENTIFIC MISCONDUCT

CONTENTS

RULES OF GOOD SCIENTIFIC PRACTICE

Preface		2
1.	General principles of scientific practice	3
2.	Cooperation and leadership responsibility within working groups	4
3.	Guidance for junior scientists	4
4.	Securing and storing primary data	5
5.	Scientific publications	5
6.	Appointing an ombudsperson	5

RULES OF PROCEDURE IN CASES OF SUSPECTED SCIENTIFIC MISCONDUCT

I.	Preliminary enquiry	7
II.	Formal investigation	8

Appendix

1)	Catalogue of conduct to be regarded as scientific misconduct	10
2)	Catalogue of possible sanctions or consequences in cases of scientific misconduct	12

Preface

Scientific honesty and the observance of the principles of good scientific practice are essential in all scientific work which seeks to expand our knowledge and which is intended to earn respect from the public. The principles of good scientific practice can be violated in many ways – from a lack of care in the application of scientific methods or in documenting data, to serious scientific misconduct through deliberate falsification or deceit. All such violations are irreconcilable with the essence of science itself as a methodical, systematic process of research aimed at gaining knowledge based on verifiable results. Moreover they destroy public trust in the reliability of scientific results and the integrity of science, and destroy the trust of scientists among themselves, which is an important requirement for scientific work today where cooperation and division of labour are the norm.

Although dishonesty in science cannot be fully prevented through rules alone, institutions have the responsibility to enunciate principles and provide rules that serve as appropriate precautions guaranteeing that all those involved in scientific activity are regularly made aware of the standards of good scientific practice. Equally, institutions have the responsibility to establish rules of procedure in cases of suspected misconduct, ensuring as far as possible the establishment of truth and implementation of appropriate sanctions. The procedures must protect the innocent, the whistle-blower (informant) and the accused unless proven guilty with reasonable certainty. These are important contributions to limiting scientific misconduct.

The basic rules of good scientific practice and the rules of procedure in case of suspected scientific misconduct set out here reflect generally acknowledged principles and are adapted to the research conditions at the European Molecular Biology Laboratory (EMBL). They have been considered by the senior scientific leadership of EMBL consisting of the Director-General, the Scientific Director, the Heads of Units and the Senior Scientists, who have special responsibility for maintaining a culture based on the principles of good scientific practice, throughout the Laboratory and in their respective Units. They have been adopted by authority of the Director-General and are binding on all persons involved in research or technical work performed in any of the Units of the EMBL.

RULES OF GOOD SCIENTIFIC PRACTICE

- adopted by the Director-General of the European Molecular Biology Laboratory
- in June 2002 –

1. General principles of scientific practice

The following rules are to be observed as general principles of scientific research at EMBL:

a) Rules governing day-to-day scientific practice

- precise observance of discipline-specific procedures for acquiring and selecting data,

- reliable securing and storage of primary data; clear and comprehensible documentation of all important results,

- the rule of systematic scepticism: openness for doubt, even about one's own results and about the results of one's own group,

- a realisation of tacit, axiomatic assumptions: watchfulness for any "wishful thinking" motivated by self-interest or other extrinsic factors including economic, political, religious or moral considerations; systematic alertness for any possible misinterpretation or over-interpretation, including over-generalisation.

b) Rules governing relations with colleagues and cooperation

- no hindrance of the scientific work of competitors, for example by delaying reviews or by passing on scientific results which have been acquired in confidence,

- active promotion of junior scientists' scientific qualifications,

- openness to criticism and doubt expressed by other scientists and team colleagues,

- careful, non-self-interested and unprejudiced assessment of colleagues; avoidance of bias

- when appropriate, declaration of both commercial and scientific conflicts of interest.

c) Rules governing the publication of results

- publication on principle of results obtained through public funding (principle of the public availability of the results of basic research),

- publication also of falsified hypotheses in an appropriate manner and admission of mistakes (principle of a science culture open to the possibility of error),

- strict honesty in the recognition and appropriate consideration of the contributions of predecessors, competitors and colleagues (principle of recognition)

- distribution to academic researchers of any materials (e.g. cells, DNA constructs) used in published experiments. Deposition of sequence, structural, and other relevant information in the appropriate public database on publication.

2. Cooperation and leadership responsibility within working groups

The head of each EMBL Unit, in concert with the Scientific Director, is responsible for a proper organisation which ensures clear allocation, depending on the size of the individual scientific working units, of the tasks of leadership, monitoring, conflict resolution and quality control and guarantees that these tasks can in fact be undertaken effectively.

Cooperation in scientific working groups must be organised in such a way that the results achieved in specialised areas within the particular undertaking can be reciprocally aired, criticised and integrated into the general body of knowledge, regardless of any considerations of hierarchy. This is also of particular significance for training junior scientists in the group towards independence. Reciprocal checking of results is to be assured, even when this entails making one's own results accessible. The primary test of a scientific result is its reproducibility. The more surprising, but also the more desirable a result is, the more important it is – as far as is possible with justifiable expense or effort – that the route to that result be confirmed within the research group before the results are passed on to the outside.

Leadership roles in working groups can only be performed responsibly in the full knowledge of all relevant circumstances; the leadership of a working group demands expertise in the field, presence and a broad perspective. Where this may no longer be possible to the desired level, because of the size of the group or for other reasons, the leadership functions must be delegated in such a way that the leadership division remains manageable and effective.

3. Guidance for junior scientists

Particular attention should be given to the training and furthering of junior scientists and to guiding them in the observance of the principles of good scientific practice. These rules and regulations are integrated in the training provided by the EMBL PhD programme and need to be rigorously followed.

4. Securing and storing primary data

Primary data as a basis for publications must, as far as possible, be stored for at least ten years from the date of publication on durable, secure carriers in the institutes or research establishments in which they arose. Access to the data has to be granted to persons with a justifiable interest or, when appropriate, in a public data repository.

Scientific experiments and calculations can only be reproduced or reconstructed if all the important steps are comprehensible. For this reason, full and adequate records are necessary, and these records must be kept for a minimum period of ten years, not least as a source of reference, should the published results be called into question by others. Wilful destruction of records prior to ten years may constitute indication of misconduct.

The Director-General or a delegated authority will rule on any disputes regarding proper reporting standards and regulations for the access and use of data.

5. Scientific publications

Publications are the most important medium for the dissemination of research results to the scientific community and to the general public. Through this medium authors publish results for the scientific reliability of which they accept responsibility. Publications which report on new scientific results must therefore adequately describe the results and the methods used, and give full and correct credit for own and third-party preparatory work; results which have already been published should only be repeated to the extent that it is considered necessary for understanding the context. Any findings which support or call into question the results presented should equally be made known.

If several originators are involved in a research effort or in the publication arising out of that effort, the only persons who may be credited as co-authors are those who themselves made a significant contribution through the design of the studies or experiments, through critical and previously unpublished materials or procedures, through working out, analysing or interpreting the data and through preparing the manuscript, these persons also having agreed to its publication. The authors always bear joint responsibility for the content; “honorary authorship” is not permitted. Support from third parties is to be recognised in a note of thanks.

The group leader carries ultimate responsibility for publications, including filed patent applications, arising from the group. All publications that include group members as authors must therefore be approved by the group leader. In case of dispute, the parties involved will meet with the Director General, who will decide on the appropriate course of action.

6. Appointing an ombudsperson

An independent, appropriately qualified person should be appointed by the Director-General from among the scientific staff of the EMBL to act as an ombudsperson. It is the job of the ombudsperson in particular to be available to all concerned as a

confidential advisor in cases where there is suspicion of a violation of the principles of good scientific practice.

RULES OF PROCEDURE IN CASES OF
SUSPECTED SCIENTIFIC MISCONDUCT

- adopted by the Director-General of the European Molecular Biology Laboratory
- on x June 2002 -

I. Preliminary enquiry

1. A person who becomes aware of any significant indication that scientific misconduct within the meaning of the catalogue of misconduct (Appendix 1) has occurred has the responsibility of notifying the Director or the Coordinator of the EMBL Unit concerned, who in turn must notify the Director-General in writing. If the Unit Coordinator is himself/herself implicated in the enquiry the Director-General should be notified directly. The Director-General may deal with the case directly or through the Scientific Director. The Unit's Director/Coordinator is responsible for the immediate collection of all relevant materials, unless implicated, in which case this is done by the Scientific Director. At this, and all subsequent stages of the enquiry, all parties to the investigation should observe absolute confidentiality with regard to anyone not directly involved in the enquiry in order to minimise damage to the reputations of innocent parties to the investigation.

2. Should, based on the information available to them, the Director-General and the relevant Unit Coordinator be of the opinion that there is significant indication that scientific misconduct has occurred, they should then inform the Head of Personnel and/or the EMBL Legal Advisor and keep them informed of all further developments in the enquiry.

3. The Director-General or the Unit Coordinator acquaints the suspect with the incriminating facts and evidence orally and, in summary form, in writing. The suspect is given a period of two weeks at the maximum in which to respond. Without the informant's consent, his or her name is not disclosed to the suspect at this stage.

4. After receipt of the suspect's response or the passing of the deadline, the Director-General and the Unit Coordinator decide without delay whether further investigation is necessary in the preliminary enquiry, and if so, what measures are to be taken.

5. Once the further investigation procedures have been completed or in the case that further measures are deemed not necessary, the Director-General and the relevant Unit Coordinator shall decide without delay as to whether the preliminary enquiry should be terminated or transferred to a formal investigation.

    a) The preliminary enquiry is to be terminated, should the grounds for suspicion not have been sufficiently substantiated or have been disproved.

    b) If the preliminary enquiry shows proof of misconduct, the Director-General shall without delay decide whether to issue a warning or a written reprimand

and shall close the preliminary enquiry. If the matter appears sufficiently grave for more serious sanctions to be appropriate, the Director-General will refer the case to the Joint Advisory Disciplinary Board for advice.

c) Should the preliminary enquiry have confirmed adequate grounds for suspicion in the matter, but not at the same time have proven any misconduct, the Director-General shall without delay decide to assign the matter to a formal investigation.

6. At every stage in the preliminary enquiry the suspect shall be given the opportunity to state his or her case, insofar as this is not thought to adversely affect the enquiry procedures, the latest opportunity for this being before the final decision in the preliminary enquiry.

7. A written record should be kept of the directions and results of the individual steps in the preliminary enquiry, and of the conclusion of the preliminary enquiry, together with the essential reasons behind the conclusion. A written statement of the final result of the preliminary enquiry and the essential reasons behind it should be sent to the suspect, the Head of Personnel, the informant and in the case of sanctions or consequences to the Chairperson of SAC.

8. Until culpable misconduct has been proven, the details of the enquiry participants and the intermediate results of the preliminary enquiry shall be treated in strictest confidence. Only the Director-General can authorise release of information.

9. If the Director-General and the Unit Coordinator cannot reach agreement on a decision within the framework of the preliminary enquiry, the Director-General alone shall decide.

II. Formal investigation

1. Jurisdiction

The formal investigation will be conducted by an investigating committee appointed by the Director-General, which consists of e.g. Unit Coordinator, one other Senior Scientist, Head of Personnel or EMBL Legal Advisor, Dean/Associate Dean of Graduate Studies. The person suspected of misconduct will be informed of the composition of the committee and may object to a selection. The Director-General may either choose a substitute or provide in writing the reason for maintaining the initial choice.

In individual cases the investigating committee may co-opt, as non-voting advisers, experts from the relevant field as well as people who are expert in dealing with such cases.

2. Procedure

a) The investigating committee conducts closed oral proceedings that are confidential. By unfettered weighing of the evidence it seeks to establish whether scientific misconduct has occurred. The suspect must be granted an oral hearing if he or she desires it and may call on the assistance of a person whom he or she trusts. Other persons being heard may also enlist such assistance.

b) The disclosure of the name of an informant may become necessary if the suspect cannot otherwise defend himself or herself effectively, in particular because the credibility of the informant has an important bearing upon a finding of misconduct.

c) If the investigating committee decides by a simple majority that scientific misconduct has been sufficiently established, it submits the result of its investigation, together with a recommendation that a warning, reprimand or more serious sanctions be considered, to the Director-General for a decision. Otherwise the proceedings are terminated.

d) In the case of a warning or a reprimand the procedures set out in Staff Regulations R 2 5.02 and R 2 5.03 shall be followed respectively. Where more serious sanctions are contemplated, the Director-General will pass the investigations committee report to the Administrative Director for action under Staff Regulation R 2 5.05 et seq.

e) The essential reasons which have led to the termination of proceedings or the submission to the Director-General must, without delay, be communicated in writing to the person affected and to the Unit Coordinator involved, as well as to the informant if he or she requests it.

3. Restoration of reputations

If appropriate, EMBL will take all reasonable action to restore the reputation of the respondent if the respondent is not found guilty of scientific misconduct and will consult the respondent concerning any appropriate publicity to be given to this outcome, or other actions that might be taken on their behalf to restore their reputations.

The Head of Personnel will ensure that all reference to the matter is expunged from the respondent's personal file. All persons who have been interviewed or otherwise informed of the charge will be notified in writing that the charges have been found to be without foundation. Respondents will be consulted regarding other actions that might be taken on their behalf to restore their reputations.

Appendixes

1) Catalogue of conduct to be regarded as scientific misconduct

2) Catalogue of possible sanctions or consequences in cases of scientific misconduct

Appendix 1

CATALOGUE OF CONDUCT
TO BE REGARDED AS SCIENTIFIC MISCONDUCT

I. Scientific misconduct occurs when in a scientifically significant context, false statements are made knowingly or as a result of gross negligence, when the intellectual property of others is infringed, or if their research work is significantly impaired in some other way.

In particular, the following may amount to misconduct:

< False statements >

1. the fabrication of data;

2. the falsification of data, e.g.

   a) through the undisclosed selective reporting and rejection of unwanted results,

   b) through the manipulation of a representation or illustration;

3. incorrect statements in a letter of application or in an application for support (including false statements concerning the publication in which work is said to have appeared, and concerning work accepted for publication);

< Infringement of intellectual property >

4. with respect to a copyright work of another person or significant scientific findings, hypotheses, theories or research methods of others

   a) the unauthorised exploitation involving usurpation of authorship (plagiarism) or commercial rights,

   b) the misappropriation of research methods and ideas (theft of ideas and methods),

   c) the unjustified acceptance of scientific authorship or co-authorship,

   d) the falsification of the contents or

   e) the unauthorised publishing and making accessible to third persons of work, findings, hypothesis, theory or research method not yet published.

Involvement in a collaboration does not justify infringement of the rights of collaborators. The Group or Team Leader is the authorising authority for 4 a and 4e.

5. the assertion of the (co-)authorship of another person without his or her consent;

< Impairment of the research work of others >

6. the sabotage of research work (including damaging, destroying or manipulating experimental arrangements, equipment, documents, hardware, software, chemicals or other items required by another person for carrying out an experiment).

< Joint accountability >

II. Joint accountability may, *inter alia*, be the result of

1. active participation in the misconduct of others;

2. leaving unreported knowledge or strong evidence of falsification committed by others;

3. co-authorship of falsified publications;

4. gross dereliction of supervisory duties.

Final decisions must depend upon the circumstances of each case.

Appendix 2

CATALOGUE OF POSSIBLE SANCTIONS
OR CONSEQUENCS IN CASES OF
SCIENTIFIC MISCONDUCT

The following catalogue of possible sanctions for or consequences of scientific misconduct is intended as an initial guide, not an exhaustive enumeration. Because no two cases are likely to be the same, and because the seriousness of any established scientific misconduct must be taken into account, there is no uniform guide to appropriate reactions; rather, these must be tailored to fit the circumstances of each case. The Director-General, with the assistance of the Administrative Director or Head of Personnel will decide on the appropriate sanction.

If he or she deems it necessary in order to protect the scientific and working climate of EMBL, the Director-General may place a person suspected of potential scientific misconduct on leave, and exclude access to a particular laboratory or facility, or to the Laboratory as a whole. Such action is of an administrative nature and does not constitute disciplinary action. It terminates upon closure of the case without finding of fault, unless a contract expires earlier.

I. Labour law consequences

It must be expected that, in most cases of scientific misconduct within EMBL, the person involved will be an employee of EMBL. It follows that consequences consistent with Staff Rules and Regulations should be considered first.

1. A warning

2. A written reprimand

3. Suspension with or without pay, for a period not exceeding six months

4. Loss of one or more steps

5. Reassignment to a post involving a reduction in grade or remuneration

6. Dismissal with or without notice

II. Academic consequences

Academic consequences in the form of withdrawal of academic degrees are not normally within the power of the EMBL, but are rather under the control of the bodies which conferred the degrees, usually the universities. These bodies must be notified in cases where serious scientific misconduct has had some connection with the acquisition of an academic qualification. A possibility, in particular, is the withdrawal of the doctoral degree. However, in the case of a doctoral degree granted by EMBL,

alone or jointly with another institution, EMBL will be able to withdraw the degree on its authority.

III. Civil law consequences

Notwithstanding the authority of the Director-General to impose consequences, which is in no way limited by the provisions of this and the next section, the following civil law consequences may be considered and brought into action.

1. a court order not to enter the premises;

2. restitutory claims against the person concerned, e.g. claims for the restitution of stolen scientific or other similar material;

3. claims to abatement and cessation under copyright law, the law relating to personal integrity, patent law and competition law;

4. claims for the surrender of grants, e.g. scholarships, third-party funds or the like;

5. damage claims asserted by the EMBL or by third persons in cases of personal injury, property damage or the like.

IV. Penal consequences

Penal consequences are always to be considered if it is suspected that the scientific misconduct also amounted to a criminal offence. The prosecuting authorities may only be called in with the agreement of the Director-General.

Inter alia, the following are possible offences:

1. Infringement of the private sphere or of personal secrets

   - the spying out of data
   - exploitation of secrets belonging to others

2. Criminal offences involving death or bodily injury

   - negligent homicide
   - intentional or negligent bodily injury

3. Offences against property

   - theft
   - embezzlement
   - fraud
   - subsidy fraud
   - breach of trust

4. Falsification of documents

   · falsification of documents
   · falsification of technical records

5. Damage to property

   · damage to property
   · alteration of data

6. Infringement of copyright and patent law

   · unauthorised use of works protected by copyright or patent

V. Withdrawal of scientific publications/ Information to the public/press

Scientific publications which are erroneous due to scientific misconduct must be withdrawn if they have not yet been published, and must be corrected if they have been published (retraction); collaborators must, as far as is necessary, be notified in an appropriate manner. In principle, the author/s and any publishers involved are obliged to do this; if they take no action within reasonable time after being reminded to do so, the EMBL will initiate whatever suitable corrective measures may be available.

In cases of serious scientific misconduct, the EMBL will notify other affected research institutions or scientific organisations. Professional organisations may also be notified where this is justified. In order to protect third persons, to preserve trust in scientific probity, to restore its scientific reputation and to prevent consequential damage as well as to serve the public interest, the EMBL may be obliged to notify third persons who have been affected and inform the public.