

INSTRUCTIONS TO AUTHORS

(Updated September 12, 2025)

1. General Information

1.1. *Biochemistry (Moscow)* is a monthly international journal established by the Russian Academy of Sciences and published concurrently in Russian and English.

1.2. *Biochemistry (Moscow)* publishes works in all fields of biochemistry, as well as conceptually important works on biochemical aspects of related fields (molecular biology, biophysics, bioorganic chemistry, microbiology, immunology, physiology, neurobiology, gerontology, biomedical sciences, etc.) aimed at understanding molecular and cellular bases of biological processes. The journal also covers new experimental techniques in the field of biochemistry, theoretical advances relevant to biochemistry, reviews of modern biochemical research topics and mini-reviews. **The journal does not consider** purely phenomenological works which describe changes in biochemical parameters or markers of biological processes **without connection with the mechanisms** that caused these changes or are results of such changes, as well as works on cloning and expression of individual genes (including those in transgenic animals and plants) and materials analyzing genomic polymorphisms.

1.3. Finished original works presenting new experimental results are considered for publication, as well as methodological works providing description of new methods of biochemical research, theoretical materials describing new principles and approaches for solving some or other biochemical problems. Papers based on investigation of a well-known object isolated from alternative sources are not considered for publication.

“**Short communications**” section publishes short experimental articles of a preliminary or priority nature that require accelerated publication and have received the highest ratings from reviewers. In the cover letter the authors have to justify necessity of accelerated publication of the material. Turnover time is 1 month.

The journal publishes **Reviews** invited by the Editorial Board (or offered by the authors and approved by the Board) on the most newsworthy problems of biochemistry and related sciences. The review articles must meet the following requirements: 1) the authors must have **their own works** on the subject of the review; 2) the list of references should include **works** published on this topic during the last 5 years; 3) the review should not be a retelling and, sometimes, a word for word quotation of the fragments from the earlier published works, it should contain a critical analysis of the cited materials and the suggested concept, the authors’ view on the problem that prompted them to write this review. The Editors and reviewers are strictly vigilant about plagiarism; 4) reviews must not include previously unpublished material and may be rejected in peer-review. Since there is no detailed description of the research methods and results and there is no statistical analysis, the evaluation of this data is impossible.

The section “**Discussion**” provides opportunity for the authors to comments and provide critical remarks about the works published earlier in the journal, to propose a new hypothesis. The section has a polemic nature and publishes responses of the parties affected by the publications.

1.4. The journal is included in the Bibliographic Databases Web of Sciences, Biochemistry and Biophysics Citation Index, Biological Abstracts, BIOSIS Database, Chemical Abstracts, Chemical Titles, Current Contents/Life Science, Excerpta Medica, Index Internacional de Cardiologia, Index Medicus (MEDLINE/PubMed), International Abstracts of Biological Sciences, The ISI Alerting Service, Science Citation Index, Science Citation Index Expanded, SCOPUS, Compendx; RISC (Russian Index of Scientific Citation). The journal is included in the list of peer-reviewed scientific publications of the Higher Attestation Commission (Russia).

1.5. Rules for authors and information about the journal can be found on the journal websites (<http://protein.bio.msu.ru/biokhimiya> and <https://biochemistrymoscow.com>), as well as at the portals of

the publishing houses Pleiades: <http://pleiades.online/ru/journal/biochmsc/> and Springer: <https://link.springer.com/journal/10541>. The journal website in English presents contents of all issues starting from 1996, with abstracts of the articles, keywords, and addresses of the authors. Free access is provided to the full texts in the special issues of the journal devoted to the most pressing problems of biochemistry.

1.6. The impact factor of *Biochemistry (Moscow)* in 2024 was 2.2. According to the Scopus data, the journal is in the 3rd quartile (Q3) among journals with biochemical and geriatrics & gerontology profiles and in the 2nd quartile (Q2) among editions of biomedical and biophysics orientation. The Russian version of *Biochemistry (Moscow)* ranks 1st in the SCIENCE INDEX 2024 rating in the “Medicine and Healthcare” category and 2nd in the “Biology” category.

1.7. To enlarge the scope of the readers and increase citation of your work, there is a possibility to publish an article in *Biochemistry (Moscow)* using the Open Access mode. All information about the Open Access publication of the article can be found in the publisher’s website (<http://pleiades.online/en/authors/openaccess/>) as well as by contacting the Editorial office.

2. Preparation of Manuscripts

2.1. The editorial board accepts manuscripts submitted for consideration via the Publisher’s Author Portal: <https://publish.sciencejournals.ru>.

2.2. The manuscript – full text, including Abstract, list of references, figure captions and tables – is presented as single file; each figure is presented as a separate file also. If the material is large in volume, archiving programs should be used. All pages of the manuscript including those of the list of references, tables, and figure captions should be numbered consecutively; the lines also should be consecutively numbered. Positions of figures/tables should be indicated in the text.

2.3. On a separate page information about the authors is provided, including addresses, contact numbers, and e-mail, and the author responsible for the editing is also indicated. When submitting a manuscript, authors should send to the Editorial Board **a cover letter** in which it is necessary to indicate that (1) the submitted material (or its part) has not been published anywhere else and is not under review for publication in other editions; (2) the authors are familiar with the ethical norms on publication of scientific articles required by international agreements and observe them; (3) the authors provided information on the potential conflicts of interests; (4) the authors are familiar with the rules for conducting research involving human and/or animals and observe them; (5) each co-author acknowledges his consent to the authorship.

2.4. Authors must explicitly disclose any use of artificial intelligence (AI) tools in the preparation of their manuscript, detailing which parts of the text, data analysis, or figures were generated or significantly assisted by AI.

3. Requirements for Manuscript Format

3.1. The submitted manuscript should be condensed to the utmost compatible with clarity and carefully edited, but without compromising comprehension and possibility of reproduction of the results.

3.2. Our preferred format for text is Microsoft Word, with the style tags removed. The manuscript should be arranged as follows: 1) title; 2) authors’ full names; 3) full names of the institutions, zip code, city, and e-mail (affiliation); 4) abstract; 5) keywords; 6) short title of the manuscript (running title); 7) the manuscript text including the list of references, tables, figure captions.

The *title* should be as short and informative as possible and should not contain abbreviations.

If the authors of the article are employees of different institutions, the institutions should be numbered and superscript numbers indicating the authors' affiliations should follow the authors' *last names*; the author responsible for correspondence with the Editors should be indicated by asterisk to the right of the number. For each of the authors the complete name of the institution with the postal code, city, and country should be given; for the author responsible for the correspondence the e-mail address should be also indicated. The authors who have contributed equally should be marked with a symbol (#) in the author list.

The *Abstract* should be short (no more than 250 words) and concisely and clearly describe the major significant results of the work and conclusions from it.

The list of *Keywords* should not contain more than 15 items.

A short *Running title* should be given on a separate line after the title.

When using non-standard abbreviations, the section *Abbreviations* should be added. The *manuscript text* should be divided into sections: 1) Introduction; 2) Materials and Methods; 3) Results; 4) Discussion (if discussion is short, the results and discussion may be combined); 5) Conclusions; 6) References.

The *Introduction* briefly describes background of the problem with imperative review of the works, in which similar or relevant studies have already been conducted, and objective of the study is formulated.

The *Materials and Methods* section should be as short as possible, but adequate for reproduction of the experiments; the section should also include materials, reagents and equipment used in the work with indication of the company and manufacturer country, e.g., glycerol (Sigma-Aldrich, USA), a JEM 100C electron microscope (JEOL, Japan) (if the company name is mentioned repeatedly in the body of the article, the name of the country should be omitted). Only new procedures should be described in detail; the previously published and well-known methods should be referred to the list of references, indicating the author and/or the name of the method (e.g., the protein concentration was determined by the Bradford method [7]). If the method is not widely known, it is advisable to set out its principle and specify the author.

References to the methods such as “nuclease was measured by the method [7]” or “according to [7]” **are not allowed** (the reference cannot be an independent member of a sentence).

The section *Results* should present the data in figures and tables; the experiments which do not need documentation are described in the text. In this section, the results should not be discussed; the authors can limit themselves by explaining causal relationships between the experiments described.

The section *Discussion* should contain interpretation of the results (but not their repetition) and comparison with the previously published data. It is advisable to illustrate the major results with a simple and visual scheme.

If necessary, the manuscript closes with the *Conclusions* section which is separate from the *Discussion* section.

In accordance with the Journal participation in the International Committee on Publication Ethics (COPE), the authors have to introduce at the end of the manuscript some phrases demonstrating adherence to the international ethical standards. Examples of the relevant items in the final part of the manuscript are given below.

1) Contribution of each author to the study and preparation of the manuscript should be indicated (“Contributions” section). For example: John P. Smith and Anna Do – conceived and supervised the study; Carl Broide – carried out experiments; Ivan P. Petrov – discussed the results of experiments with input from all authors; Lui Jing and Haifeng Yong – wrote the manuscript, and Franklin Parada – edited the manuscript.

2) If the work was supported by any organization, in the item “Funding” it should be indicated what foundation and grant supported this study and each part of the work separately, if the sources of funding are different. The full names of institutions and sponsoring organizations should be given.

3) In the “Acknowledgments” item the authors can present information about any assistance in conducting the work and preparing the article: about useful discussions, assistance of colleagues, providers of materials, scientific data, computer equipment, devices; about conducting researches at

collective use centers; about assistance in the technical preparation of the text. Description of the role of each author in preparation of the publication is preferred.

4) In the item “Conflict of Interests” the authors declare the presence or absence of conflict of interests in financial or any other field. This item is obligatory.

5) The item “Compliance with Ethical Standards” is also obligatory. If studies were conducted on animals, this item states: “All procedures performed in studies on animals were in compliance with ethical standards of the institution in which the studies were conducted and with the approved legal acts of the Russian Federation and international organizations”.

If the study was conducted with the participation of humans, the item “Compliance with Ethical Norms” states: “All the procedures carried out in the research with participation of humans were in compliance with the ethical standards of the National Research Ethics Committee and with the Helsinki Declaration of 1964 and its subsequent changes or with comparable ethics standards. Informed voluntary consent was obtained from every participant of the study”.

If the manuscript does not contain descriptions of studies involving humans or using animals which has been performed by any of the authors, the item “Compliance with Ethical Norms” states: “This article does not contain descriptions of studies performed by the authors with participation of humans or using animals as objects”.

The items “Conflict of Interests” and “Compliance with Ethical Standards” are merged in the article in the “Ethics declarations” subsection.

6) If the manuscript contains identification information about participants of the study, the following position should be included in the item “Informed Consent”: “From all participants whose personal information is used in this manuscript the additional written voluntary consent was obtained”.

The list of *References* should be as short as possible but should contain references for all fundamentally important recent publications on this problem. In the journal the sequential numbering system of citations is adopted, i.e., in the text the order number of the cited source [in square brackets] corresponds to the number in the list of References. Authors should carefully check the sequence of the reference numbering in the text and their number in the bibliography. **It is not allowed** to include references to websites in the list of references; it is necessary to refer to publications of the authors offering these electronic resources (programs/databases). If such publications are absent, the reference is given in the text in the same way as to other unpublished materials (for example, the Database of Bacterial Carbohydrate Structures, [csdb/glycoscience.ru/bacterial](http://csdb.glycoscience.ru/bacterial)).

References to unpublished data are not permitted. Citation of personal communication should provide the person’s full name and affiliation. Duplications should be avoided in the list of references, as well as citation of retracted papers.

The list of *References* is printed as a separate section of the manuscript with the names and initials of all the authors, title of the cited article, and output data. In addition, it is advisable to give doi of the article. Below the examples of references to journals, books, collected articles, and dissertations are given.

1. Beltrami, C., Besnier, M., Shantikumar, S., Shearn, A. I. U., and Rajakaruna, C. (2017) Human pericardial fluid contains exosomes enriched with cardiovascular-expressed microRNAs and promotes therapeutic angiogenesis, *Mol. Ther.*, **25**, 679-693, <https://doi.org/10.1016/j.ymthe.2016.12.022>.
2. Sloan-Dennison, S., and Schultz, Z. D. (2018) Label-free plasmonic nanostar probes to illuminate *in vitro* membrane receptor recognition, *Chem. Sci.*, **10**, 1807-1815, <https://doi.org/10.1039/c8sc05035j>.
3. Anisimov, V. N. (2008) *Molecular and Physiological Mechanisms of Aging* [in Russian], Nauka, St. Petersburg.
4. Sambrook, J., and Russell, D. W. (2001) *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor, Cold Spring Harbor Laboratory Press, N.Y.
5. Tanphaichitr, V. (2001) in *Handbook of Vitamins* (Rucker, R., and Suttie, J., eds.) Marcell Dekker, N.Y., pp. 275-316.
6. Gendrolis, A. A., Serebryannikov, N. B., and Gandel', V. G. (1978) in *Prostaglandins* (Azhgikhin, I. S., ed.) [in Russian], Meditsina, Moscow, pp. 332-347.
7. Gandelman, O. A. (1992) *Kinetics and Mechanism of Bioluminescent Oxidation of Fire-Fly Luciferin*:

8. Author's abstract of Candidate's (Doctoral) dissertation [in Russian], Moscow State University, Moscow. Rosenkranz, A. A., Slastnikova, T. A., Durymanov, M. O., and Sobolev, A. S. (2013) Malignant melanoma and melanocortin 1 receptor, *Biochemistry (Moscow)*, **78**, 1228-1237, <https://doi.org/10.1134/S0006297913110035>.

For authors using the EndNote system the Editors provide a style that supports formatting citations in the text and the list of references. The style file can be found on the journal websites <http://protein.bio.msu.ru/biokhimiya> and <https://biochemistrymoscow.com> in the sections for authors.

3.3. The volume of **experimental article** should not exceed 20 typewritten pages, including references, tables, and figures (three figures are equivalent to one page) with figure captions, and abstract; the number of figures and tables should not exceed eight; **short communications** should not be more than 12 pages (including no more than 4 figures and/or tables); **mini-reviews** should not exceed 16 pages (including no more than 5 figures); **reviews** should not be more than 35 pages (including no more than 8 figures); communications in the “**Discussions**” section can be up to 4 pages.

3.4. Text files should be submitted in Microsoft Word format (version 6.0 and later); Times New Roman font of 12-point size should be used for the entire manuscript file. The text should be in one column, with line spacing of one and a half intervals, with 3 cm left margin, left alignment, and without word hyphenation. In the page, it should be no more than 30 lines.

In the text formatting the use of italics, bold, subscript and superscript indices, Greek and mathematical symbols (12-point Symbol font) should be according to the Journal style.

The style of the text material should be simple: **without programmed headlines, inserts, templates, references to literary sources (hyper-references)**; without increase in line and letter spacing; without the use of templates, “normal” style should be selected. This particularly applies to the “References”, because programmed sequence numbers disappear when transferred to the publishing program.

Authors should not use such functions of the Word program as “Bookmark”, “Note”, “Footnote”, “Endnote”, because the publishing program misinterprets them. If the text contains a footnote (or endnote), then the authors should print “{Footnote}” immediately after the sentence or paragraph with its number and then directly the footnote text.

If the “Review” function was used during manuscript preparation, then before saving the file the “Review” function should be deactivated and the function “Accept all changes in the document” should be used.

3.5. Tables should be provided in cases when the data cannot be presented in the text.

Each table is prepared on a separate page and has its own title. Column headings should be provided; dimension of the values should be separated with comma. The column headings should be as short as possible, values easily deducible from the available ones (e.g., difference or percent) should not be given. Repetition of the same data in the text, tables, or figures is not allowed.

Tables are accepted only in the Word format (doc, docx). If the tables contain graphic inserts, these inserts should be sent as separate high-quality graphic files.

3.6. Figures with corresponding legends should be included in the file of the manuscript, and each figure should be located just after the paragraph, where it was mentioned for the first time.

In addition, figures should be presented as separate files meeting the following requirements:

- for schemes and graphs **without half-tone inserts**: files in the “tiff”, “jpg” or “pdf” format, in Black-and-White mode (Line-art, Bitmap). Pixelized (raster) images are accepted only in the “tiff” or “jpg” formats;
- for **half-tone** drawings or graphs with **half-tone inserts**: files in the “tiff”, “jpg” or “pdf” format, in half-tone Black-and-White mode (Grayscale). Pixelized (raster) images are accepted only in the “tiff” or “jpg” formats;
- for **color drawings**: files in the “tiff”, “jpg” or “pdf” format, in the color mode CMYK (for

color printing), RGB (for color drawings in the electronic version). Pixelized (raster) images are accepted only in the “tiff” or “jpg” formats.

- independently of the figure type, it should have **high real resolution**: at least 300 “dpi” for half-tone illustrations; no less than 600 “dpi” for line and mixed (half-tone/line) illustrations. Pixelization of images in raster graphic formats should not be rough. Lines of figures must be of at least 3 points thick. Excessively small symbols (letters, numbers, icons, etc.) should be avoided. Pixelized (raster) drawings should not be inserted into a Word document or translated into “pdf” format, because this impairs their quality;
- figures should have size corresponding to their informativeness. The size of a figure for one column should not be less than 8 cm; for two columns – no less than 17 cm. Figures should not be excessively large;
- vector illustrations should not contain point fillings, such as “Noise”, “Black & white noise”, “Top noise”. For vector drawing, all used fonts should be included in the file;
- fonts inside the figures should be selected from the “Arial” set with the size of 9 points;
- scanning images from books and other printed publications should be avoided, since such files give a poor quality when printed and are unreasonably large.

General requirements for preparing plots, diagrams, and formulas:

- **plots** should contain designations of the coordinate axes (the parameter measured and the unit of measurement), as well as of curves and other details. Inscriptions on the axes are made along them in “Arial” font with a capital letter, the unit of measurement is separated with a comma and not with brackets (e.g., Eluent volume, ml). The lines inside the figure should be numbered (the numbers should be in *italics*: 1, 2, etc.), and in the subtitle (not within the figure) explanation should be given to each line. Experimental points should preferably be presented as hatched and non-hatched circles, squares, triangles, or diamonds. Individual curves can also be presented as solid, dashed, or dotted lines. All curves should be clearly depicted with the lines of thickness (usually 3 points) that makes it possible to reduce the figure to the final size in the journal. Axes of coordinates in most cases must be displayed with black (not gray) lines. Background of the plot or diagram should be white, without coordinate grid lines (except the cases when a different color of the background color or the grid are necessary for proper comprehension);
- in **diagrams and photographs** individual elements (columns, gel tracks, etc.) should be numbered in *italic* Arabic numerals (1, 2, etc.) and in the figure caption (not within the figure) each number should be explained. If in addition to Arabic numerals, introduction of Roman numerals (I, II, III, etc.) is required, these numerals must be printed in the direct outline;
- if the figure consists of several parts (diagrams, plots, schemes, protein structures, photographs, including electropherograms), they should be marked with lower-case letters (a, b, c, etc.) using the “Times” headset larger than the main text. These letters should be placed in the upper left corners of the respective parts. In the figure caption an explanation should be given to each part of the figure;
- “ChemWindows” software is used to type **chemical equations** in the text; long complex **mathematical expressions** should be submitted as figures without legends in one of the adopted formats (“pdf”, “tiff”, or “jpg”). Each equation is given as a separate file, the name of which corresponds to the equation number in the manuscript. These files should be prepared using the guidelines for drawings given above. The “Equation Editor” function should be used **only for extended mathematical equations** (for both numbered and given in the text). Short expressions (designations) appearing directly in the text, such as ΔG , $T\Delta S$, K_m , should be typed as the rest of the text, using the main functions of “Word”. Simple expressions requiring “kerning” (simultaneous use of both subscript and superscript located one under the other) should be typed using only the subscript and superscript functions of “Word” (e.g., NH_3^+), and the “kerning” will be performed by the layout maker during the typesetting. These requirements are essential, because the publishing program misunderstands the data obtained using the “Equation Editor” function;
- mathematical expressions should not exceed 8.5 cm in width. Larger expressions should be divided into several lines. Only Times New Roman and Symbol fonts should be used for mathematical expressions. If equations are submitted as pixelized (raster) images, they should be in Black-and-White (Line-art, Bitmap) mode. Such images should have very high real resolution (pixelization should not be

rough). Pixelized (raster) images should not be inserted into a Word document or converted to “pdf”, because it can impair their graphic quality;

– **presentation of amino acids, nucleotides, and other sequences** often requires the exact vertical positioning of the elements. To prevent errors and avoid tedious proofreading of large amounts of information, the authors should submit such materials in a form suitable for reproduction.

We draw attention to the general conditions for publication of the illustrations:

– the inscriptions and symbols in the figures can be different in the Russian and English versions when translated, therefore, for photographs and figures where the inscriptions are imposed onto a complex, non-one-toned background, it is desirable to provide the second version without the text and all symbols; in other illustrations the inscriptions should be placed avoiding their contact with the other parts of the illustration. Authors may also prepare themselves versions of the figures with English inscriptions;

– the figure should have the title and an informative subscription that makes its meaning understandable without reference to the text: conditions specific to the particular experiment are indicated; reference to the basic text may be given only to avoid repetitions and obscurities;

– color illustrations are published **free of charge to authors**, if they are to be placed **only in the electronic version of the article** and in the printed version of the journal they will be presented in black-and-white. However, the authors should bear in mind that in the printed version with black-and-white figures the captions will be the same as in the color electronic version, thus, color indications in the figure captions should be avoided. Authors need to select colors preventing the loss of informativity at the black-and-white printing. It is advisable to mark the colored lines of the plots with designations, numbers, or special symbols, or to use different line styles for each color. It is desirable also to mark colored areas in illustrations with different designations or special symbols, but not with the same symbols of different colors. If the color separation of the areas is approximately in the same color tone, then it is desirable to draw a thin line as a border between them. If there are many color areas in similar color tones, it is desirable to additionally mark the areas with symbols or hatching. It is desirable to make all inscriptions and designations not colored, but black or white, depending on the support;

– if the electronic version of the article contains several color figures, it is possible to publish in the printed version these figures in color with charge, or to publish them in black-and-white free of charge. Publication in the printed version only some of the color figures in color is not possible;

– it is advisable to print copies of the prepared figures to make sure that they look good in printed form: all elements of the figure should be clearly visible when printed, the background should be clean, the inscriptions and numbers should be easy to read. It is often rather difficult to assess the figure quality only by its look on the computer screen;

– if the authors use illustrations or tables from other publications (including their own) in the manuscript, they should request permission from the Copyright holders of these publications for reprinting or using the materials.

Failure to follow these rules for preparing graphical material leads to sending it back to the authors for modification and to delay in the manuscript publication.

3.7. Additional materials to articles. Supplementary materials (audio- and video files, presentations, additional tables and figures, etc.) could be submitted provided the authors are primary copyright holders of these materials and permission was not granted to any person/organization (except Publishers) for their use, or the authors have documented permission to use these materials for publication and distribution in the journal. Supplemental materials should be stand-alone items. Supplemental materials should not include information essential for understanding of the paper. Supplemental materials are not edited and processed, and are published as submitted by authors. Files containing supplementary materials should be numbered in order, for example – ESM_1.jpg, «ESM_2.pdf, ESM_3.xls. There should be reference to Supplementary materials in the text (“additional data are presented in Online Resource 1”, “...as shown in Table in Online Resource 2”). Supplementary materials are considered as an integral part of the paper and the same requirements are applied as for the main manuscript. Supplementary materials are published only in online version of the journal at <https://www.springer.com>.

3.8. We encourage posting of **preprints** of primary research manuscripts on preprint servers, authors’ or

institutional websites, and open communications between researchers whether on community preprint servers or preprint commenting platforms. Authors should disclose details of preprint posting, including doi and licensing terms, upon submission of the manuscript in *Biochemistry (Moscow)* journal. Once the preprint is published, it is the author's responsibility to ensure that the preprint record is updated with a publication reference, including the doi and a URL link to the published version of the article on the journal website.

3.9. All physical values are recommended to be presented in the International System SI.

3.10. Physical and chemical symbols in the text, structural formulas of organic compounds, and mathematical equations must be generated on a computer. In the designation with letters of relationships of units a forward slash should be used, e.g., mol/s (mol per second). In the more complex expressions alongside with the forward slash brackets are used to prevent an ambiguity: a/(bc), but not a/b/c or a/bc; (a/b)c, but not a/b · c. The relationships can also be represented as the product of symbols of the units raised to a degree (positive and negative), e.g., mol · s⁻¹. Expression type mA/gel, μmol/min · mg protein, etc. are not allowed. In such cases it should be written as follows: mA per 1 column of gel, μmol/min per 1 mg protein, etc.

3.11. In preparing the article it is necessary to take into account **the rules for the use of symbols, abbreviations, conventional designations**, etc. recommended by the Biochemical Nomenclature Committee of the International Union of Biochemistry and Molecular Biology (<https://iubmb.org>). The conventional designations given in these Instructions are mandatory for the authors and may be applied without special interpretation (definition). Symbols and abbreviations not specified in the list presented below are to be defined on the first page, sub-line, under the heading "Abbreviations".

It should be remembered that abbreviations create difficulties for the reader, therefore their use should be restricted to a minimum. Clarity and lack of ambiguity are more important than conciseness. On the other hand, it is sometimes convenient to use abbreviations for the names of substances and other terms, particularly in equations, tables, and figures.

Names of simple substances may be replaced by their formulas, e.g., NaCl instead of "sodium chloride", CH₃COOH or AcOH instead of "acetic acid". When abbreviations for chemical compounds are needed, maximum use should be made of standard chemical symbols (C, H, O, P, S, Na, Cl, etc.), trivial names (folate, etc.) and symbols (Me, Pr, Ac for methyl, propyl, acetyl, respectively).

One-letter symbols are preferred over three-letter symbols for amino acid residues in polypeptides and proteins:

Alanine	Ala	A
Arginine	Arg	R
Asparagine	Asn	N
Aspartic acid	Asp	D
Aspartic acid or asparagine	Asx	B
Cysteine	Cys	C

Glutamine	Gln	Q
Glutamic acid	Glu	E
Glutamic acid or glutamate	Glx	Z
Glycine	Gly	G
Histidine	His	H
Isoleucine	Ile	I
Leucine	Leu	L
Lysine	Lys	K
Methionine	Met	M
Phenylalanine	Phe	F
Proline	Pro	P
Serine	Ser	S
Threonine	Thr	T
Tryptophan	Trp	W
Tyrosine	Tyr	Y
Valine	Val	V

Macromolecular compounds of repeated units may be represented by the prefix “poly” or the subscript n . Thus, polylysine can be referred to as poly(Lys) or (Lys) $_n$; a polymer of alternating alanine and lysine residues is poly(Ala–Lys) or (Ala–Lys) $_n$; similar polymer with random distribution of alanine and lysine residues is poly(Ala, Lys) or (Ala, Lys) $_n$. The index n may be replaced by the average number, e.g. (Lys) $_{10}$ or with indicating the range, e.g., (Lys) $_{8-12}$.

For the three-letter designation of amino acid residues of proteins direct letters should be used, of which the first letter is capital and the rest ones are lower-case. Amino acid residues with the number in the sequence should be given as Asn $_{223}$.

According to the genetic nomenclature rules, **gene names should preferably represented by**

three-letter designation in Latin *Italic* letters (except drosophila and some other organisms). The corresponding products (proteins) should be designated with capital letters. In **prokaryotes** normal genes are designated with lower-case letters with the “plus” symbol in superscript (e.g., *proA*⁺); mutant genes are also designated with lower-case letters with a mutation number (e.g., *proA22*). In **eukaryotes** normal genes are designated with capital letters (e.g., *LEU2*) and mutant genes with lower-case letters with a mutation number, if necessary (e.g., *leu2-3*).

When a new gene sequence is described in the article, **it is necessary to pre-deposit it** to the **GenBank** database or to another publicly available database.

Symbols used for monosaccharides:

Arabinose	Ara	Fructose	Fru
2-Deoxyribose	dRib	Fucose	Fuc
Galactose	Gal	Mannose	Man
Galactosamine, N-acetylgalactosamine	GlcN, GlcNAc	Neuraminic, N- acetylneuraminic acid	Neu, NeuAc
Glucose	Glc	Ribose	Rib
Glucosamine, N-acetylglucosamine	GlcN, GlcNAc	Xylose	Xyl

When it is necessary to indicate furanose or pyranose, the monosaccharide symbol should be followed by the letter in italics *f* or *p*, e.g., Rib*f* for ribofuranose.

For nucleosides, nucleotides and polynucleotides the following symbols are used:

Adenosine	A
Guanosine	G
Inosine	I
Ribosylthymine	T
Uridine	U
Xanthosine	X
Adenosine-5'-mono-, di- and triphosphates	AMP, ADP, ATP
Cytidine-5'-mono-, di- and triphosphates	CMP, CDP, CTP

Guanosine-5'-mono-, di- and triphosphates	GMP, GDP, GTP
Orotidine-5'-mono-, di- and triphosphates	OMP, ODP, OTP
Ribothymidine-5'-mono-, di- and triphosphates	rTMP, rTDP, rTTP
Uridine-5'-mono-, di- and triphosphates	UMP, UDP, UTP

The corresponding deoxyribonucleotides are designated by addition of a Latin lower-case letter “d” before the three-letter symbol, e.g., dATP, dGTP, etc.

AMP isomers are designated as 2'-AMP, 3'-AMP, 5'-AMP, 3': 5'-AMP (adenosine-3':5'-monophosphate, cAMP).

The symbols used for nucleic acids are presented below:

Deoxyribonucleic acid	DNA
Complementary DNA	cDNA
Mitochondrial DNA	mtDNA
Ribonucleic acid	RNA
Mitochondrial RNA	mtRNA
Messenger RNA	mRNA
Ribosomal RNA	rRNA
Transfer RNA	tRNA
Specific tRNA	tRNA ^{Ala} , tRNA ^{Glu} , etc.
Isoacceptor RNA	tRNA ₁ , tRNA ₂ , etc.
Aminoacylated tRNA	Ala-tRNA, Glu-tRNA, etc.

Polyphosphoinositides and the products of their hydrolysis should be designated as follows:

Phosphatidyl	Ptd
--------------	-----

Inositol	Ins
Phosphate	P

Thus, PtdIns(4,5)P₂ stands for phosphatidylinositol-4,5-bisphosphate.

Names of enzymes may be abbreviated (with explanation in the “Abbreviations”), e.g., G6FDG (glucose-6-phosphate dehydrogenase); substitution of the substrate name included in the enzyme trivial name by the standard abbreviation, e.g., ATPase, Glu-decarboxylase, etc. is permitted. The following abbreviations do not require special definition:

BSA	bovine serum albumin
CM-cellulose	carboxymethyl cellulose
CoA, CoASH	coenzyme A
DEAE-cellulose	diethylaminoethyl cellulose
EDTA	ethylenediaminetetraacetate
EGTA	ethylene glycol-bis(β -aminoethyl ether) N,N,N',N'-tetraacetate
FAD, FADH ₂	flavin-adenine dinucleotide and its reduced form
FMN, FMNH ₂	riboflavin-5'-phosphate and its reduced form
G-protein	guanine-nucleotide-binding regulatory protein
GSH, GSSG	reduced and oxidized glutathione
IgG	immunoglobulin G
NAD, NAD ⁺	nicotinamide-adenine dinucleotide and its oxidized and reduced forms
NADP, NADP ⁺ , NADPH	nicotinamide-adenine dinucleotide phosphate and its oxidized and reduced forms
PAGE	polyacrylamide gel electrophoresis

Pi, PPi	phosphate, pyrophosphate
POPOP	1,4-bis(5-phenyl-2-oxazolyl)benzene
PPO	2,5-diphenyloxazol
Q, QH2	ubiquinone, ubiquinol

Names of the classes of compounds (fatty acids, protein, virus, etc.), as well as short terms (folate, furan, etc.) **are not abbreviated**. Such terms as “red blood cells”, “extracellular fluid”, and names of tissue preparations, buffers, suspension media **should not be abbreviated**.

The following abbreviations may be used for common physicochemical methods and related terms: CD, circular dichroism; EPR, electron paramagnetic resonance; ESR, electron spin resonance; GLC, gas-liquid chromatography; HPLC, high-pressure liquid chromatography; IR- and UV-spectroscopy, infrared and ultraviolet spectroscopy; NMR, nuclear magnetic resonance; ORD, optical rotatory dispersion; SDS-PAGE, polyacrylamide gel electrophoresis in the presence of sodium dodecyl sulfate; TLC, thin-layer chromatography.

Generally adopted abbreviations such as PCR (polymerase chain reaction) and ELISA (enzyme-linked immunosorbent assay) also do not require explanation.

3.12. Nomenclature of isotope-labeled compounds. The isotope symbol is placed in square brackets directly attached to the front of the atom name (without a space): [^{14}C]urea, [$\alpha\text{-}^{14}\text{C}$]leucine, L-[methyl ^{14}C]methionine. When more than one position in a substance is labeled and the positions of these atoms are not indicated, the number of labeled atoms is indicated by the subscript index to the right of the symbol: [$^{14}\text{C}_2$]glycol acid. The symbol “U” indicates uniform distribution of the label: the designation [U- ^{14}C]glucose means that the ^{14}C isotope is distributed equally between all six positions. The symbol “G” indicates general labeling (in [G- ^{14}C]glucose ^{14}C may be present at any, but not necessary all, of the six positions). In the latter case [^{14}C]glucose will suffice.

The isotope prefix precedes the part of the compound name to which it refers: iodo[^{14}C]acidic acid, 1-amino-[^{14}C]methylcyclopentanol ($\text{H}_2\text{N}^{14}\text{CH}_2\text{C}_5\text{H}_8\text{OH}$), fructose-1,5-[1- ^{32}P]biphosphate. Terms such as [^{131}I]-labeled albumin should not be abbreviated to [^{131}I]albumin, since native albumin does not contain iodine; the designation [^{131}I]iodoalbumin is permitted.

When a compound contains isotopes of more than one element, their symbols should be placed in alphabetical order: [3- ^{14}C , 2,3- D^{15}N]serine. Deuterium can be designated with the symbols ^2H or D and tritium with ^3H or T.

The positions of isotope labeling are indicated by Arabic numerals, Greek letters, or prefixes placed within the square brackets before the element symbol to which they are attached by a hyphen: [1- ^3H]ethanol, L-[$\alpha\text{-}^{14}\text{C}$]leucine, [carboxy- ^{14}C]leucine, [3,4- ^{14}C , ^{35}S]methionine, L-[methyl- ^{14}C]methionine.

The above rules are also applied when the labeled compounds are designated by the standard abbreviations or symbols: [$\alpha\text{-}^{32}\text{P}$]ATP, [^{32}P]CMP (not CM^{32}P). However, radioactive inorganic phosphate and pyrophosphate may be designated $^{32}\text{P}_i$ and $^{32}\text{PP}_i$, respectively.

Square brackets may be omitted for the simple molecules by writing their chemical formulas:

$^{14}\text{CO}_2$, H_2^{18}O , D_2O , $\text{H}_2^{35}\text{SO}_4$, $^{32}\text{PO}_4^{3-}$ (but [^{32}P]phosphate). Square brackets are not to be used when the isotope symbol is attached to a word which is not a chemical name or refers to a class name of compounds: ^{131}I -labeled, ^3H -ligands, ^{14}C -steroids, ^{14}C -amino acids.

When describing results of experiments with labeled compounds, absolute values of radioactivity should be given, wherever possible, in curies (Ci), becquerels (Bq), disintegrations per minute (DPM), or counts per minute (CPM).

3.13. Recommendations on specific topics common for biochemical literature are given below [see also *Biochem. J.*, **289**, 1-15 (1993)].

Animals, plants, microorganisms. The full binomial names should be included for all experimental animals (other than common laboratory animals) and plants. The strain, variety, and, if possible, source of the material should be given. Reports describing effects of changes in feeding should contain composition of the feeding mixtures (growing media).

For **microorganisms**, full binomial Latin names should be printed *italicized* in the title, abstract, and at the first mention in the text. Further in the text, single-letter abbreviation may be given for the generic name along with the full species name. The number of the organism in the collection from which it was obtained should be given. If two genera with the same initial letter are studied, abbreviations such as *Strep.* and *Staph.* may be used. Ranks higher than genus (e.g., Eubacteria, Lactic acid bacteria) generic names used adjectively (e.g., staphylococcal) are not italicized.

Centrifugation. When conditions for centrifugation are critical, sufficient information should be provided for the experiment to be repeated: the centrifuge rotor, the quantitative composition of the suspension medium, operation temperature, the time of rotor operation at constant velocity (ignoring acceleration and deceleration periods), the centrifugal field based on the average radius of the liquid rotation. For example: "The centrifugation was performed for 15 min at 2°C and 10,000*g* (r_{av} . 8 cm)".

For density-gradient centrifugation, the centrifuge and rotor manufacturer(s), temperature, and gradient composition should be stated. Results should preferably be presented as a function of distance from the rotor center rather than the fraction number; in this case it is unnecessary to indicate top and bottom of the gradient. If fraction numbers are used, the top and bottom of the gradient should be indicated.

For ultracentrifugation, the following parameters are used: sedimentation coefficient (not constant), *s*; sedimentation coefficient at zero concentration at 20°C in water, $s_{20,w}^0$; Svedberg unit (10^{-13} s), *S*; particle specific volume, *v*; diffusion coefficient, *D*; diffusion coefficient in water at 20°C, $D_{20,w}^0$. The temperature at which the sedimentation and diffusion were performed should be indicated.

Chromatography. Using photographs or schemes of paper and thin-layer chromatography should be restricted to cases when it is difficult to give corresponding information in the text. The rate of a substance movement relatively to the solvent front in paper or thin-layer chromatography is characterized by *R_f* value. The solvent composition is best described as follows: butan-1-ol : CH₃COOH : H₂O (4 : 4 : 1, v/v).

Elution diagrams for column chromatography should be shown with the effluent volume increasing from left to right. Units of concentration and volume should be indicated clearly. Column dimensions and, if possible, column void volume (*V₀*) should also be stated. The elution peak maximum may be characterized by elution volume (*V_e*) or, preferably, by partition coefficient (α or *K_D*). Calibration curves for columns (e.g., plots of molecular mass versus *V_e* or *K_D*) will not be published.

Electrophoresis. Photographs of gel electropherograms will be published, if they provide some important information; drawings or densitograms may be more informative in certain cases. Composition of the electrophoretic medium, pH, temperature, electrophoretic mobilities (*m*), and operative voltage should be presented in the text. The symbol *pI* should be used for isoelectric points.

Enzymes. For nomenclature the authors should follow recommendations of the latest edition of "Enzyme Nomenclature" (1992, Academic Press, New York) with the supplements (<http://www.enzyme-database.org/news.php>) taken into account. When a particular enzyme is mentioned in the text of manuscript, its EC (Enzyme Commission) number should be provided alongside. Units of enzyme amount should be defined in each paper in terms of the rate of the reaction catalyzed under specified conditions. The SI unit for the rate is 1 mol of the substrate transformed per second (or 1 mol of the product formed per second). This value of the rate gives the unit of the enzyme amount called "katal" (symbol: kat). Units of enzyme activity may be also expressed in terms of its amount that provides another rate of the reaction, e.g., 1 μ mol substrate transformed per minute.

Concentrations of proteins are often determined versus a standard protein (e.g., BSA) solution; the standard protein used, its source, and, if possible, water constant should be stated.

Rate constants for the forward and reverse reactions in the multistep enzyme- catalyzed process should be designated by k_{+n} and k_{-n} , respectively. The Michaelis constant (K_m) is defined as substrate concentration ($[S]$) which corresponds to $v = V/2$, where V (or $V_{\max}$) is the reaction rate under conditions of the enzyme saturation with the substrate and v is the rate of product appearance or substrate disappearance. For reactions involving two substrates (A and B) $K^A = [A]$ at $v = V/2$ and $[B]$ extrapolated to infinity; the value of $[A]$ at which $v = V/2$ at the final concentration (which should be specified) of B should be referred to as an apparent Michaelis constant for A ($K^A_{m,app}$). Other parameters used in enzyme kinetics include: K_S , dissociation constant for enzyme–substrate complex; K_i , dissociation constant for enzyme–inhibitor complex; $[I]_{50}$, inhibitor concentration at which the rate is decreased by half; h , Hill coefficient (parameter in the Hill equation used to describe S-shaped dependences of v on the substrate or inhibitor concentrations) [see also “Recommendations on Symbolism and Terminology in Enzyme Kinetics” published in *Arch. Biochem. Biophys.*, **224**, 732-740 (1983)].

Substance amount, molecular mass, Dalton, and molar concentration. The SI unit of the substance amount (n) is mole (abbreviated mol), i.e., the substance amount containing the same number of structural units (molecules, atoms, ions, electrons, etc.) as the number of carbon atoms in 0.012 kg of ^{12}C (the Avogadro’s constant, $N_A = 6.02 \cdot 10^{23}$ per mol, gives the number of structural units in the mole of any substance). Molar mass (M) is the mass of 1 mol of the substance (m/n), and its dimension is g/mol or kg/mol. Obviously, mass (m , g), amount (n , mol), and molar mass (M , g/mol) are different terms which are related to one another with the relationship $m = nM$. There are two preferred ways of specifying the mass of a biochemical entity: relative molecular mass (M_r , formerly “molecular weight”) is the ratio of the molecule mass to 1/12 of the atom ^{12}C atom. Hence, it is dimensionless. Molecular mass is the mass of one molecule of a substance expressed in Daltons; the Dalton is defined as 1/12 of the ^{12}C atom, or M/N_A . Thus, it may be said that a protein has a relative molecular mass of 50,000 ($M_r = 50,000$) or a molecular mass of 50,000 Daltons (better, 50 kDa), and may be referred to as the 50,000- M_r protein or the 50-kDa protein. It is not correct to express M_r in Daltons, either M_r or molecular mass (kDa) should be used throughout the paper.

Solutions should be described in terms of **molarity** (M, mM, μM , etc.), i.e., the number of the substance moles in 1 liter of the solution, not **normality** (N). The decimal system should be used, e.g., 0.25 M HCl. Concentration expressed in % must be defined as w/w, w/v, or v/v, e.g., 5% (w/v) means 5 g/100 ml. For salts solutions with concentration expressed in %, it should be indicated whether the compounds were hydrated or anhydrous.

Nucleotide sequences. Authors should remember that nucleotide sequence should be determined in both DNA chains. A clear description of such determinations and data on the complete sequence will suffice.

Metric prefixes in tables and figures. Authors must be careful when using exponents to avoid numbers with too many digits in the headings of tables and in figures. This is illustrated by the following examples: 1) a concentration 0.00015 M may be expressed as $15 \cdot 10^{-5}$ M, but it is preferable to give it using a prefix, as 0.15 mM or 150 μM ; it is appropriate to express concentration of 0.15 in the table or figure under the heading “Concentration, mM” or 150 under “Concentration, μM ”, or 15 under “Concentration $\times 10^5$, M” (but not 15 under the heading “Concentration, $\text{M} \times 10^{-5}$ ”); 2) listing of 2 under the heading “ $10^3 k$ ” means $k = 0.002$, and 2 under the heading “ $10^{-3} k$ ” means $k = 2000$; 3) complex quantities are treated similarly; a value of 200 M^{-1} for $1/[S]$ would appear as “2” under the heading “ $10^{-2}/[S]$, M^{-1} ” or as “0.2” under the heading “ $1/[S]$, mM^{-1} ”. Concentrations may conveniently be indicated by square brackets.

The following decimal prefixes and their symbols should be used for multiples and subdivisions of units:

Multiple	Prefix	Symbol
10^{12}	tera	T

10^9	giga	G
10^6	mega	M
10^3	kilo	K
10^2	hecto	h*
10	deca	da*
10^{-1}	deci	d*
10^{-2}	centi	c*
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f
10^{-18}	atto	a

* To be avoided whenever possible (except for cm).

A combination of a prefix and a unit is treated as one symbol and may be raised to a power without using brackets, e.g., mM^{-1} and cm^2 .

Buffer solutions must be specified in a way allowing readers to reproduce the experimental conditions. It is useful to give complete composition of each buffer solution in the “Materials and Methods” section or at the first mention, e.g., 0.09 M CH_3COONa /0.01 M CH_3COOH , pH 5.6 (that means that the buffer solution has these concentrations of these substances). A short designation “0.1 M sodium acetate buffer, pH 5.6” may be used thereafter throughout the paper. If a buffer contains two or more ionizable substances, e.g., pyridine and CH_3COOH , concentration of each component must be specified.

Trivial names of the following common buffers may be used without definition:

Aces	2-[(Amino-2-oxoethyl)amino]ethanesulfonic acid
Ada	(N-[2-Acetamido]-2-iminodiacetic acid

Bes	2-[Bis(2-hydroxyethyl)amino]ethanesulfonic acid
Bicine	N,N-Bis-(2-hydroxyethyl)glycine
Bistris	2-[Bis-(2-hydroxyethyl)amino]-2-(hydroxymethyl)propane-1,3-diol
Hepes	4-(2-Hydroxyethyl)-1-piperazine-ethanesulfonic acid
Hepps	4-(2-Hydroxyethyl)-1-piperazine-propanesulfonic acid
Mes	4-Morpholine-ethanesulfonic acid
Mops	4-Morpholine-propanesulfonic acid
Pipes	1,4-Piperazinediethanesulfonic acid
Taps	3-{[2-Hydroxy-1,1-bis(hydroxymethyl)ethyl]amino}-1-propanesulfonic acid
Tes	3-{[2-Hydroxy-1,1-bis(hydroxymethyl)ethyl]amino}ethanesulfonic acid
Tricine	N-[2-Hydroxy-1,1-bis(hydroxymethyl)ethyl]glycine
Tris	2-Amino-2-(hydroxymethyl)-1,3-propanediol

Incubation media such as Krebs–Ringer solution, Eagle’s medium, or Waymouth’s medium should be defined by citing the reference or by giving their compositions.

Spectra and spectroscopy data. Full spectra should be published only if they demonstrate novel or important information. The spectra for UV or visible absorption, fluorescence, circular dichroism, and optical rotatory dispersion should have a wavelength scale (nm or μm). Where possible, molar terms should be used when describing absorption, optical rotation, and circular dichroism. As stated above, commonly used abbreviations of methods (ORD, CD, EPR, ESR, and NMR) do not need definition.

Visible and ultraviolet absorption spectroscopy. The value of $\log(I_0/I)$ characterizes optical

density of a solution, and this represents absorbance when scattering and reflection are negligible. If scattering is taken into account, e.g., when density of a cell culture is estimated, the more general term transmittance (T) should be used. Otherwise, the term **absorbance** should be used, but not **extinction** or **optical density**. The symbols used are as follows: A , absorbance ($\log(I/I_0)$); a , specific absorption coefficient ($\text{liter} \cdot \text{g}^{-1} \cdot \text{cm}^{-1}$, or alternatively used $A^{1\%}_{1\text{cm}}$); ϵ , molar absorption coefficient (absorbance of 1 M solution in 1 cm light-path) ($\text{liter} \cdot \text{mol}^{-1} \cdot \text{cm}^{-1}$, or $\text{M}^{-1} \cdot \text{cm}^{-1}$, but not $\text{cm}^2 \cdot \text{mol}^{-1}$). Wavelength (nm) at which measurements were done are given without units: A_{280} . No equal sign is placed between ϵ or A and its numerical value.

IR-spectra are reported as percentage of transmittance (T) versus wavelength (μm) or frequency (cm^{-1}).

Optical rotation is reported as specific rotation ($[\alpha]_{\lambda}^t$), which is numerically equal to the rotation (in degrees) in a solution with concentration of 1 g/ml and a 1 dm (10 cm) light-path at wavelength λ and temperature t . The solution concentration (g/100 ml) and solvent should be stated, e.g., $[\alpha]_{420} 27.5^\circ$ (2 g per 100 ml methanol). Data may be also presented as molar rotation:

$$[M] = [\alpha] \cdot M_r \text{ and } [m] = [\alpha] \cdot M_r/100.$$

For biopolymers, optical rotatory dispersion ($[m]_{\text{m.r.w.}}$) is reported for the mean residue ($[m]_{\text{m.r.w.}}$; the dimension of $[m]$ is $\text{deg} \cdot \text{cm}^2 \cdot \text{dmol}^{-1}$).

Optical rotatory dispersion is reported as variation of $[\alpha]$ or $[m]$ with changing of wavelength or frequency.

Circular dichroism is reported as the molar absorption coefficient ($\Delta\epsilon = \epsilon_L - \epsilon_R$, where ϵ_L and ϵ_R are absorption coefficients for the light polarized to the left and to the right) or as molar ellipticity $[\theta]_M$. For biopolymers, molar concentrations in terms of the mean residue M_r are often used. Units of molar absorption coefficient are $\text{liter/mol per 1 cm}$ or $\text{M}^{-1} \cdot \text{cm}^{-1}$; units of molar ellipticity are the same as for optical rotation $[m]$ calculated per the mean residue. The relationship between $\Delta\epsilon$ and $[\theta]_M = 3300 \cdot \Delta\epsilon$

Fluorescence spectroscopy. In describing fluorescence (F) excitation and emission spectra, it should be stated whether they are relative, normalized or corrected, and what is the correction nature. Data of the fluorescence polarization and spectra are reported as polarization ratio (P) or anisotropy ratio (A); both values are dimensionless.

Statistical treatment of results. Data from a large number of independent experiments should be reported in a way permitting evaluation of their reproducibility and significance. When the purpose is to determine quantitative or statistical characteristics of a population, the basic information is adequately given by: 1) the number of independent experiments (repeated measurements in one animal, results from pooled tissues, etc. represent only one independent estimate); 2) the mean value; 3) the standard deviation; the coefficient of variation of the standard error of the mean value estimation. It should be clearly indicated whether the standard deviation or the standard error was used. A convenient form for including these data into a table is, for example, 263 ± 2.5 (10), where the number in parentheses represents the number of values used in calculating the mean.

If the results are claimed significant, a significance test should be performed, and probability estimated. Normal distribution statistics is used unless otherwise is stated.

It is recommended to provide data that are impossible or impractical to include in the printed journal (such as large data sets of identified proteins in proteomic research) as supplements, which will be available to readers only on-line, at the journal website. Such supplements should be referred to in the manuscript at the appropriate place in the text.

4. Processing of Manuscripts (Reviewing, Editing, Proofs)

4.1. Submission. A correctly submitted manuscript received by the Staff Editor is assigned a registration number and the date of receipt is recorded, and the authors are informed by e-mail about it by the Editors (or the ID number is created by the Pleiades Portal automatically). **Manuscripts not written according to the rules are returned to the authors without reviewing.**

4.2. Reviewing. When submitting a manuscript, authors may indicate two-three potential reviewers (name, e-mail address) from experts in the field of research, as well as those whose participation in the reviewing is undesirable.

All manuscripts are reviewed by the Executive Editor-in-Chief and sent to the Handling Editor knowledgeable in the relevant specific field of study; Handling Editor, in turn, indicates two or three specialists to review the manuscript. The list of Handling Editors and members of the Editorial Board is posted on the journal's website, as well as on the *Biochemistry (Moscow)* sites on the Pleiades and Springer portals.

Based on the expert opinions, the Editorial Board determines the further fate of the manuscript and in controversial cases attracts additional reviewers. By decision of the Editorial Board, the manuscript may be accepted for publication in the presented form, sent to the authors for major/minor revision, or rejected. A manuscript may be rejected because of insufficiently high evaluations by the reviewers, because of inconsistency with the profile or level of the journal publications.

A manuscript which received the highest score from two independent reviewers is published as **“Accelerated publication”** (publication time 1 month).

If necessary, the manuscript is sent to the authors for revision according to the comments of the reviewers and editors, after which it is re-reviewed, and the Editorial Board again decides on acceptability of the manuscript for publication. At the beginning of the published article, the dates are given of the initial receipt of the manuscript, the receipt after the revision, and of the acceptance for publication.

The revised manuscript should be returned to the Editor within two months after the authors receiving the reviews.

The practice of “single-blind review” is accepted in the journal, i.e., the names of reviewers are unavailable to authors, and confidentiality of the reviewers is strictly observed. All editorial letters to the authors are signed by the responsible Executive Secretary of the journal.

4.3. Communication. At all stages of working with manuscripts, as well as for communication with the authors, the Editorial Board uses e-mail or Pleiades Publishing Portal, therefore, the authors should be very attentive to the e-mail address specified in the manuscript and should promptly report any changes occurred.

4.4. Translation. Each issue of the journal is prepared simultaneously in Russian and English. Articles are translated by a group of highly qualified translators specialized in biochemistry. During the work, the editors and translators often need to contact the authors and eliminate inaccuracies in the text of the article. Corrections agreed with the authors are introduced in both the Russian and English texts at the editing stage.

4.5. Editing. All the articles are edited by the Scientific Editors of the journal, and the prepared text is sent to the authors for correction.

4.6. Proofreading. The Editorial office sends to the authors the proofreading of the article as a pdf-file and instructions for correcting it by e-mail. At the proofreading stage, no replacement of text, figures or tables is allowed. If, nevertheless, it is necessary, the problem is resolved by the Editorial Board; in exceptional cases, the article is transferred to another issue of the journal.

4.7. Online First mode. Papers accepted after accelerated editorial process can be published as “Online first” on the Springer website (<https://link.springer.com/journal/10541>).

4.8. Upon the publication, the Editor sends pdf-file of the article to the authors.