

# Guidelines for Authors of *Russian Journal of Bioorganic Chemistry* (2020)

## SCOPE

The editorial board uses the term *bioorganic chemistry* to cover a wide range of problems related to the investigation of the structure and function of biomolecules using the methods of organic and physical chemistry.

The journal publishes original articles dedicated to investigations of the structure, structure–function relationship, and synthesis of biologically important high-molecular mass compounds (proteins, nucleic acids, polysaccharides, and mixed biopolymers of any type). The journal also publishes investigations of the chemical background for the activity of highly organized cell components (e.g., cell membranes or molecular receptor complexes), intact cells and organs, problems of neuro- and immunochemistry, biotechnology, and fundamental principles for developing diagnostics for the most important infectious diseases.

The journal pays great attention to new achievements in the field of low-molecular mass bioregulators. Studies of natural products (e.g., peptides, peptide and steroid hormones, lipids, vitamins, antibiotics, prostaglandins, alkaloids, and other chemical compounds from microorganisms, fungi, plants, and animals), their synthetic analogues, and synthetic biologically active compounds (e.g., drugs or pesticides) are appropriate subjects for publication. Ecological problems, analysis of natural toxicants and xenobiotics, and the protection of the environment from their impact are also possible subjects for publication.

## TYPES OF MANUSCRIPTS

1. The principal form of publication is a regular article containing the results of original experimental or theoretical studies. A submitted manuscript should contain new data that has not been published before. Articles including detailed experimental data previously published in the form of a short communication or thesis are also acceptable. In this case, a reference to the previous communication should be given. The length of the manuscript, including tables and references, is strictly limited to 40000 characters (approximately twenty-four 1.5-spaced typewritten pages).

2. *Russian Journal of Bioorganic Chemistry* also publishes review articles devoted to the most important achievements in the field of bioorganic chemistry. The length of reviews, including tables and references, is strictly limited to 60000 characters (approximately thirty-five 1.5-spaced typewritten pages). A review exceeding these limits should be divided into several parts and may be published in two or more issues of the journal. A “minireview” should not exceed 20000 characters.

Authors wishing to publish a review should submit a summary for preliminary evaluation. This should briefly state an explanation of the relevance of the proposed subject and contain preliminary data on the contents and structure of the review, its length, and the number of illustrations and references.

3. Short Communications are short articles that need rapid publications because of their importance and interest. These are also published in the journal.

4. The journal also publishes special issues devoted to important dates in the history of bioorganic chemistry and physicochemical biology and reviews of most important congresses, symposia, and conferences held in Russia. Decisions on such special issues are made by the editorial board no later than six months before the proposed meeting.

5. Tables of contents, abstracts, and other important information can be found on the publisher and distributor’s websites.

## MANUSCRIPT PREPARATION

1. All pages of a manuscript should be numbered consecutively, including the list of references. If several manuscripts are submitted simultaneously, the order of their publication should be indicated by the authors.
2. The manuscript should be prepared in Microsoft Word and submitted in electronic form by e-mail.
3. Manuscripts of regular articles and letters to the editor should be arranged in the following order:
  - (1) Rubric (if necessary).
  - (2) Title of the manuscript.
  - (3) List of authors. If the work was carried out at more than one institution, then the names of authors should be followed by superscript italicized letters to indicate authors' affiliations. It is also necessary to indicate the corresponding author by an asterisk and the e-mail addresses for correspondence; other contact information for the authors would not be superfluous.
  - (4) Author's affiliations and addresses.
  - (5) The abstract (no more than 1.5 typewritten pages, i.e., ~2500 characters) with a brief description of the content and the most significant results of the work. The use of formulas is not recommended in the abstract. The abstract is a separate part of the manuscript, and therefore, all necessary abbreviations and conventional signs must be indicated here.
  - (6) Keywords (no more than six).
- (7) The main text of the manuscript with the following standard sections: INTRODUCTION, RESULTS AND DISCUSSION; EXPERIMENTAL (this should include enough details to permit reproduction of the experiments and include the detailed characteristics of the reagents and sorbents used or the methods of their preparation, the instruments applied, references to the standard procedures, etc.); ACKNOWLEDGMENTS: (a) acknowledgment of useful discussions and discussions and credits; (b) acknowledgments of the provision of materials, data, computer software, devices for temporary use; (c) acknowledgments of the use of shared facilities; (d) acknowledgments of the assistance in the technical preparation of the text; etc.; FUNDING (the names of the funding organizations and grant/project numbers should be given); COMPLIANCE WITH ETHICAL STANDARDS: A mandatory section, which contains three subsections prepared as described on the publisher's website (COMPLIANCE WITH STANDARDS OF RESEARCH INVOLVING ANIMALS, COMPLIANCE WITH STANDARDS OF RESEARCH INVOLVING HUMANS AS SUBJECTS, and CONFLICTS OF INTERESTS); REFERENCES (on a separate page); TABLES (each on a separate page); FIGURE CAPTIONS (that should be collected on a separate page).
  - (8) Figures, schemes, and chemical formulas.
  - (9) A scanned copy of the [copyright transfer agreement](#), completed and signed by all authors.
4. TABLES and FIGURES should be numbered in the same order in which they are mentioned in the text.
5. As a rule, figure captions and table legends should be comprehensible without reference to the text (unless this information has already been included in another caption, legend, or the EXPERIMENTAL section). Arrangement of information in tabular or graphical form is not recommended if the same information can be presented more effectively by a mathematical expression or by running text.
6. References to the cited literature should be numbered with Arabic numerals in square brackets in the order of their citation in the text. References cited in tables or in figure captions are numbered

according to their position in the text. REFERENCES should be listed after **CONFLICT OF INTEREST**.

Reference to an article in press is possible only when it has doi.

Literature references should be formatted as shown below:

*Books*

Tikhonov, A.N. and Arsenin, V.Ya., *Solution of Ill-Posed Problems*, Winston, V.H., Ed., Washington: Harper and Brace, 1977.

Eliel, E.L., *Stereochemistry of Carbon Compounds*, New York: McGraw-Hill, 1962.

*Collection of Articles*

Knorre, D.G. and Lavrik, O.I., *Theory and Practice in Affinity Techniques*, Sundaram, P.V. and Eckstein, F., Eds., London: Academic, 1978, pp. 169–178.

*Journal Papers*

Ulrich, D.R., *J. Non-Cryst. Solids*, 1988, vol. 100, pp. 174–193. [https://doi.org/10.1016/0022-3093\(88\)90015-4](https://doi.org/10.1016/0022-3093(88)90015-4)

*Dissertations*

Cheishvili, T.Sh., Study of the Surface Phenomena in Manganese-Containing Glasses, *Cand. Sci. (Chem.) Dissertation*, Moscow: Research Inst., 1981.

*Patents and Inventor's Certificates*

Lyle, F.R., US Patent 5 973 257.

Ivanov, S.A., USSR Inventor's Certificate no. 127, 1983.

All journals should be abbreviated as in [Chemical Abstracts Service Source Index](#).

7. The Latin names of animals, plants, and microorganisms should be used.
8. Enzymes should be named according to the IUB classification, followed by the current Enzyme Commission (EC) number in parentheses (see Appendix 4).
9. The names of chemical compounds should be consistent with the nomenclature recommended by the International Union of Pure and Applied Chemistry (IUPAC) and the International Union of Biochemistry (IUB) (see IUPAC's *Nomenclature of Organic Chemistry*, 3rd ed., IUPAC's *Nomenclature of Inorganic Chemistry*, 2nd ed., and Appendix 4).
10. Standard abbreviations and symbols recommended by the IUPAC–IUB Commission on Biochemical Nomenclature should be used to designate the trivial names of chemical compounds and groups (residues, radicals, substituents) (see Appendices 1 and 2, the IUPAC–IUB rules given in Appendix 4 and published in *Eur. J. Biochem.*, 1983, vol. 131, no. 1, and the websites: <http://www.chem.qmw.ac.uk/iupac> and <http://www.chem.qmw.ac.uk/iubmb>).

Nonstandard abbreviations of chemical compounds and general abbreviations are recommended only if complicated word combinations are repeatedly used in the text. All chemical abbreviations should be given in Latin transcription; e.g., DCC, *N,N'*-dicyclohexylcarbodiimide.

Nonstandard abbreviated chemical names, when necessary, should be composed in accordance with the international rules for the usage of chemical symbols; the application of ambiguous literal cryptograms is not recommended; e.g., Me<sub>4</sub>Si or Me<sub>3</sub>Si are preferable to TMS, (MeO)<sub>2</sub>Tr is better than DMTr, etc.

The use of cryptograms for enzyme names (e.g., LDH for lactic dehydrogenase) is not recommended. Abbreviated names of enzymes consisting of the substrate symbol and the type of enzyme activity (D-Gln-transferase, Hse-dehydrogenase) are acceptable.

All nonstandard abbreviations as well as standard abbreviations included in the IUPAC–IUB recommendation but not included in Appendices 1 and 2 should be defined in the footnote to the first sentence of the manuscript. The abbreviations given in Appendices 1–3 do not require decoding.

Isotope-containing compounds should be designated in the following way: CH<sub>3</sub>–CH<sup>2</sup>H–OH or (1-<sup>2</sup>H)ethanol, H<sub>2</sub><sup>35</sup>SO<sub>4</sub>, (<sup>32</sup>P)ATP (for isotope substituted compounds) and CH<sub>3</sub>–CH[<sup>2</sup>H]–OH or [1-<sup>2</sup>H]ethanol, [<sup>32</sup>P]ATP (for isotopically labeled compounds). For details, see Appendix 4.

Abbreviations for metric and SI (International System) units of measure should be given as in Appendix 5.

11. To facilitate further operations with the files, one should use as few fonts as possible and format text as left aligned without word hyphenation. Carriage returns (Enter) should be used only to separate paragraphs, and special styles, templates, and macro commands should be avoided.

12. For half-tone photographs (drawings) and line-art-type drawings, the TIFF, JPEG, or GIF formats are preferable. When preparing files in TIFF format, scanning should be performed with no less than 600 or 200 dpi resolution for halftone photographs (drawings) and line-art-type drawings, respectively. A separate file should correspond to each figure.

13. A cover letter should explain the content of all files, their formats, the coding for special symbols, etc.

## EVALUATION OF MANUSCRIPTS AND THEIR PREPARATION FOR PUBLICATION

1. All manuscripts pass through a two-step single-bind peer review. Manuscript accepted for publication are thoroughly edited. Minor corrections to the style, nomenclature, and form are introduced into the manuscript without the author's consent. More significant improvements are to be agreed upon with the authors, or the manuscript can be returned to the authors for revision to accommodate the remarks of the referees and the scientific editor. The date of receipt is the date when the manuscript version satisfying all the requirements is received. Revised manuscripts returned to the editorial board after six month are registered as new ones with a new date of receipt.

2. The manuscript can be rejected by the editorial board for the following reasons:

- (a) A manuscript is beyond the journal scope,
- (b) Findings are not important,
- (c) Formulation of the goals and objectives of the study are unclear,
- (d) Failure to meet the current procedures and state of knowledge in the field,
- (e) Insufficient substantiation of the conclusions in the literature and experimental material,
- (f) The reported results have been previously published in detail by the authors of this manuscript or by other researchers,
- (g) Substandard quality of the manuscript and/or failure to conform with the Guidelines for Authors.

4. If a manuscript is rejected, the editorial board sends the authors a rejection notice.

5. Contact details for the editorial board: phone [+7(095)330-7783], e-mail: rjbc@ibch.ru

**Appendix 1.** Standard symbols of selected monomeric units (residues) and substituents (groups, radicals) in biopolymers\*

Ado, A**	adenosine	Hyl	hydroxylysine
Ac	acetyl	Hse	homoserine
Aet	aminoethyl	Hyp	hydroxyproline
Ala, A**	alanine	Ino, I**	inosine
Ara	arabinose	Ile, I	isoleucine
Arg, R	arginine	Leu, L	leucine
Asn, N	asparagine	Lys, K	lysine
Asp, D	aspartic acid	Man	mannose
Asx, B	asparagine or aspartic acid	Me	methyl
Boc	<i>tert</i> -butoxycarbonyl	Met, M	methionine
Bzl	benzyl	MeOTr Ë (MeO) <sub>2</sub> Tr <sub>4</sub>	4-methoxytrityl and 4,4'-dimethoxytrityl, respectively
Bz	benzoyl	Nuc, N**	an unspecified nucleoside
Bu, Bu <sup>z</sup> , Bu <sup>s</sup> , Bu <sup>i</sup>	<i>n</i> -, <i>iso</i> -, <i>sec</i> -, or <i>tert</i> -butyl, respectively	Neu	neuraminic acid
Cyd, C**	cytidine	Neu5Ac	<i>N</i> -acetylneuraminic acid
Cbz, Z	benzyloxycarbonyl	ONSu ИЛИ OSu	succinimidooxy
Cbz(Br), Z(Br)	$\wedge$ -bromobenzyloxycarbonyl	Orn	ornithine
Cm	carboxymethyl	Ph	phenyl
Cys, C	cysteine	Phe, F	phenylalanine
Dns	dansyl [i.e., 5-(dimethylamino)-1-naphthalenesulfonyl]	Pht-	phthalyl
dAdo, dA***	2'-deoxyadenosine	Pht<	phthaloyl
dRib***	2-deoxyribose	Pr	propyl
Et	ethyl	Pro, P	proline
Fuc	fucose	Puo, R	an unspecified purine nucleoside
Fru	fructose	Pyd, Y	an unspecified pyrimidine nucleoside
Gal	galactose	Rib	ribose
Glc	glucose	Ser, S	serine
GlcA****	glucuronic acid	Suc<, -Suc-	succinyl
GlcN*****	glucosamine	Thd, T**	ribosylthymine (not thymidine, which is designated as dT or dThd)
GlcNAc*****	<i>N</i> -acetylglucosamine	Thr, T	threonine
Gln, Q	glutamine	Trp, W	tryptophan
Glu, E	glutamine acid	Tos ИЛИ Ts	tosyl (i.e., <i>p</i> -toluenesulfonyl)
Glx, Z	glutamine or glutamic acid	Trt ИЛИ Tr	trityl (i.e., triphenylmethyl)
Gly, G	glycine	Tyr, Y	tyrosine
Gro	glycerol	Urd, U**	uridine
Guo, G**	guanosine	Yrd, ^**	pseudouridine (5-ribosyluracil)
Hcy	homocysteine	Val, V	valine
His	histidine	Xaa	an unspecified amino acid
		Xyl	xylose

\*These symbols should be used only in formulas, structures, tables, and figures; \*\*A one-letter symbol should not be used for base designation; \*\*\*Similarly for other deoxynucleosides and deoxysugars; \*\*\*\*Similarly for other uronic acids; \*\*\*\*\*Similarly for other 2-amino-2-deoxysaccharides and their *N*-acetyl derivatives.

## Appendix 2. Standard abbreviations for selected names

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AMP*	adenosine 5'-phosphate
ADP*	adenosine 5'-diphosphate
ATP*	adenosine 5'-triphosphate
CM-cellulose	carboxymethyl cellulose
CoA(CoASH), CoASAc	coenzyme A and acetyl-coenzyme A, respectively
DCC	<i>N,N'</i> -dicyclohexylcarbodiimide
DMF	dimethylformamide DMSO dimethyl sulfoxide
DNA, cDNA	deoxyribonucleic acid and complementary DNA, respectively
DEAE-cellulose	(diethylaminoethyl)cellulose
EDTA	ethylenediaminetetraacetic acid
IFN	interferon
IgA, IgG, etc.	immunoglobulin A, G, etc.
Pi	inorganic phosphate
<i>P</i>	phosphate residue incorporated into compound
RNA	ribonucleic acid
SDS	sodium dodecyl sulfate
TEAB	triethylammonium bicarbonate
TFA	trifluoroacetic acid
THF	tetrahydrofuran
Tris	tris (hydroxymethyl) aminomethane

^Similarly for other nucleoside 5'-mono-, nucleoside 5'-di-, and nucleoside 5'-triphosphates

### Appendix 3. Abbreviations for frequently encountered words and terms

a.r.*	amino acid residue
b*	nucleic base
bp*	base pairs
bp*	boiling point
CD	circular dichroism
EIA and ELISA	enzyme immunoassay and enzyme-linked immunosorbent assay, respectively
GC or GLC	gas or gas-liquid chromatography, respectively
HPLC	high-performance liquid chromatography
<i>J</i>	spin-spin coupling constant
IU	international unit
IR	infrared
kb*	kilobases
<i>m-, o-, and p-</i>	<i>meta-, ortho-, and para-</i>
mp*	melting point
MS	mass spectrometry
<i>n-</i>	normal (isomer)
N*	normal concentration (of solution)
NMR	nuclear magnetic resonance
nt*	nucleotide
ORD	optical rotatory dispersion
OU or AU**	optical (or absorbance) unit
PAG	polyacrylamide gel
PAGE	polyacrylamide gel electrophoresis
PC	paper chromatography
RS	Raman spectroscopy
TLC	thin-layer chromatography
U*	activity unit
UV	ultraviolet

\*With a numeral. \*\*Dimensionless

#### Appendix 4. List of recommendations of the IUPAC–IUB commission on chemical nomenclature

Natural products and related compounds	<i>Eur. J. Biochem</i> , 1978, vol. 86, pp. 1–8
Stereochemistry	<i>Pure and Appl. Chem</i> , 1976, vol. 45, pp. 11–30
Mass spectrometry	<i>Organ. Mass. Spectrom</i> , 1979, vol. 14, pp. 1–2
Presentation of biochemical equilibrium data	<i>Eur. J. Biochem</i> , 1977, vol. 72, pp. 1–7
Presentation of thermodynamic data	Ibid. 1985, vol. 153, pp. 429–434
Abbreviations and symbols: compilation	Ibid. 1977, vol. 74, pp. 1–6
Isotopically modified compounds	Ibid. 1978, vol. 86, pp. 9–25
Amino acids, peptides, and their derivatives: nomenclature, abbreviations, and symbols; modification; conformation	Ibid. 1984, vol. 138, pp. 9–37
Proteins containing iron–sulfur clusters	Ibid. 1970, vol. 17, pp. 193–201
Electron-transporting proteins	Ibid. 1973, vol. 35, pp. 1–2
Peptide hormones	Ibid. 1991, vol. 200, pp. 599–601
Nucleotides and nucleic acids	Ibid. 1975, vol. 55, pp. 485–486
— abbreviations and symbols	Ibid. 1970, vol. 15, pp. 203–208;
— incompletely specific bases	Ibid. 1972, vol. 25, p. 1
— conformation	Ibid. 1985, vol. 150, pp. 1–5
Lipids	Ibid. 1983, vol. 131, pp. 9–15
Steroids	Ibid. 1977, vol. 79, pp. 11–12
Phosphorus-containing compounds	Ibid. 1989, vol. 186, pp. 427–456
Carbohydrates	Ibid. 1977, vol. 79, pp. 1–9
— branched-chain monosaccharides	<i>Ad. Carb. Chem. Biochem</i> , 1997, vol. 297, pp. 43–177
— unsaturated monosaccharides	<i>Eur. J. Biochem</i> , 1981, vol. 119, pp. 5–8; 1982, vol. 125, p. 1
— oligosaccharides	Ibid. 1981, vol. 119, pp. 1–3
— polysaccharides	Ibid. 1982, vol. 126, pp. 433–437
— conformation of monosaccharides	Ibid. 1982, vol. 126, pp. 439–441
— conformation of oligosaccharides	Ibid. 1980, vol. 111, pp. 295–298
Glycoproteins, glycopeptides, and peptidoglycans	Ibid. 1983, vol. 131, pp. 5–7
Quinones with isoprenoid side chain	Ibid. 1986, vol. 159, pp. 1–6
Carotenoids	Ibid. 1975, vol. 53, pp. 15–18
Retinoids	Ibid. 1972, vol. 25, pp. 397–408; 1975, vol. 57, pp. 1–7
Tocopherols and related compounds	Ibid. 1982, vol. 29, pp. 1–5
Tetrapyrroles	Ibid. 1982, vol. 123, pp. 473–475
Corrinoids	Ibid. 1988, vol. 178, pp. 277–328
Prenols	Ibid. 1974, vol. 45, pp. 7–12
Vitamin B6 and related compounds	Ibid. 1987, vol. 167, pp. 181–184
Vitamin D	Ibid. 1973, vol. 40, pp. 325–327
Enzyme Nomenclature: Recommendations (1992)	Ibid. 1982, vol. 124, pp. 223–227
— Supplement 1	San Diego: Acad. Press, 1992
— Supplement 2	<i>Eur. J. Biochem</i> , 1994, vol. 223, pp. 1–5
— Supplement 3	Ibid. 1995, vol. 232, pp. 1–6
— Supplement 4	Ibid. 1996, vol. 237, pp. 1–5
Symbols and formulae of enzymic kinetics	Ibid. 1997, vol. 250, pp. 1–6
	Ibid. 1999, vol. 264, pp. 610–650
	Ibid. 1982, vol. 128, pp. 281–291

**Appendix 5.** Symbols for selected physical and chemical values and units

Symbol	Value	Units of measure
<b>Physical chemistry</b>		
$m$	mass	$kg$ & $mg$ etc
$M$	Molecular mass	Da* (Dalton)
$M_r$	Relative molecular mass	dimensionless
$n$	Amount of substance	mol, mmol, pmol, nmol, $\mu$ mol, etc.
CB, [B]	Concentration of substance B	M (mol/L), mM, etc.
$s$	Sedimentation coefficient	S (Svedberg, $10^{-13}$ s)
<b>Thermodynamics</b>		
$T$	Thermodynamic temperature	K** (Kelvin)
$T$	Celsius temperature	$^{\circ}C$
$E$	energy	J or cal (4.1868 J)
$P$	pressure	Pa (Pascal), bar ( $10^5$ Pa), atm (101325 Pa), mm Hg (1 Torr, equal to 133.2 Pa)
$I$	ionic strength	M, mM, etc.
<b>Electromagnetic radiation</b>		
$I$	luminous intensity	Cd (Candela)
$A$	absorbance*** ( $-\log I/I_0$ )	dimensionless
$\epsilon$	molar absorption coefficient****	$M^{-1} cm^{-1}$
$Le$	radioactivity (irradiation ability)	Bq (Becquerel, $s^{-1}$ ) or Ci (Curie, 37 GBq)
<b>Chemical and enzymic reactions</b>		
$t$	time	s (not sec.), min (not mn), h (not hr)
$V$	volume	$dm^3$ (L), $cm^3$ (mL), $\mu L$ , nL, etc.
$K$	Equilibrium constant	M
$K_m$	Michaelis constant	M, mM, etc.
$K_s$	Substrate constant	M, mM, etc.
$K_i$	inhibition	M, mM, etc.
$k$	Rate constant	$s^{-1}$ or $M^{-1} s^{-1}$
$k_{cat}$	Catalytic constant	$s^{-1}$
$V$	Reaction rate	mol/s
$1+$ (or $E_{max}$ )	Maximum value of reaction rate	$M s^{-1}$
$h$	Hill coefficient	dimensionless

\*One-twelfth of the mass of the nuclide  $^{12}C$ ; \*\*Not  $^{\circ}K$ ; \*\*\*The term *optical density* should not be used; \*\*\*\*The term *extinction* should not be used.