FOOD BIOSCIENCE

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DESCRIPTION

Food Bioscience is a peer-reviewed journal that aims to provide a forum for recent developments in the field of bio-related food research. The journal focuses on both fundamental and applied research worldwide, with special attention to ethnic and cultural aspects of food bioresearch. Topics covered in the journal include but are not limited to:

Biochemical, biophysical and biological properties of foods, ingredients, and components
Mechanism of functional foods and ingredients including both novel and traditional fermented foods
Genetic, and cellular and molecular biology germane to food production and processing
Foodomics: comprehensive studies involving genomics, proteomics, metabolomics, nutrigenomics and chemogenomics of foods and their interactions with humans Biomaterials for food-related systems such as food packaging, food analysis, and delivery of nutraceuticals and functional food additives
Application of novel technology to foods.

IMPACT FACTOR

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ABSTRACTING AND INDEXING

INSPEC

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INTRODUCTION

Description

Food Bioscience is a peer-reviewed academic journal publishing original research articles, reviews, and commentaries concerning the latest development in multidisciplinary areas in food science, with an emphasis on the mechanistic studies of food quality and stability at the molecular and cellular levels. Manuscripts with innovative ideas and/or approaches that bring together different fields will receive special priority. In addition, we also address up-to-date research highlights, news and views, and commentaries covering research policies and funding trends. All research and review articles are subject to strict peer review organized by the journal, and final acceptance or rejection decision resides with the Editor-in-Chief of Food Bioscience.

Aims and scope

Food Bioscience is a peer-reviewed journal that aims to provide a forum for recent developments in the field of bio-related food research. The journal focuses on both fundamental and applied research worldwide, with special attention to ethnic and cultural aspects of food bioresearch. Topics covered in the journal include but are not limited to:

1. Biochemical, biophysical and biological properties of foods, ingredients, and components
2. Mechanism of functional foods and ingredients including both novel and traditional fermented foods
3. Genetic, and cellular and molecular biology germane to food production and processing
4. Foodomics: comprehensive studies involving genomics, proteomics, metabolomics, nutrigenomics and chemogenomics of foods and their interactions with humans
5. Biomaterials for food-related systems such as food packaging, food analysis, and delivery of nutraceuticals and functional food additives
6. Application of novel technology to foods. Articles relating only to structural identification and characterization of bioactive compounds without biofunctional data will not be published in Food Bioscience.

Articles reporting the following will not be published in Food Bioscience:

- Structural identification and characterization of bioactive compounds without biofunctional data
- Direct medical claims and/or clinical studies: therapeutic application of food compounds/isolates for treatment, cure or prevention of human diseases
- Processing/engineering without any chemistry
- Pharmaceutical, herbal, and traditional or folk medicines that are not consumed as foods
- Survey/surveillance data.

Article types

Submissions of the following types of articles are invited: short communications, mini-reviews, reviews (after discussion with the editors), and research articles. In addition, the journal will also present up-to-date research highlights, news and views, and commentaries covering food research and policy.

1. Research Articles are a contribution describing original research, including theoretical expositions, extensive data and in-depth critical evaluation, and are peer reviewed. The total length of a manuscript excluding the abstract, acknowledgements, figures, tables and references must not exceed 6000 words.

2. Review Articles and Mini-reviews are encouraged for giving an in-depth overview of a specific topic. The format and length of review papers are more flexible than for a full paper. There is a 6,000 word limit for Mini-reviews and a 10,000 word limit for Review Articles under normal circumstances. Authors may make a case to the editor if they believe there is justification for a longer length for these submissions. All review papers will be fully peer reviewed.

3. Short Communications are for concise, but independent reports representing a significant contribution to food science and engineering, not as mechanism to publish preliminary results. Only if these results are of exceptional interest and are particularly topical and relevant will they be considered for publication. A Short Communication should be no more than 3000 words, and could include up to 4 figures or tables. It should have at least 8 references. Short communications will be fully peer reviewed.
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BEFORE YOU START: INTRODUCTION AND SUGGESTIONS ABOUT STYLE

I. Goal of a scientific manuscript

The purpose of a scientific manuscript is to provide information to the reader. So, please focus on the reader. Ideally, think of a first or second year graduate student trying to read a number of papers to begin to understand the field in which she/he will be working, particularly far away geographically from where you are. And they might even be asked to duplicate the work. A general reader should not have to go to other documents to understand the paper and the student trying to duplicate the work should have enough information about the raw material and its initial handling to be able to duplicate the raw material and the work itself.

II. Consistency of presentation is critical

We are allowing you some flexibility to make certain choices in terms of style. However, you must stay consistent with your choices throughout the entire manuscript.

Towards the end of this guideline, there will be two discussions of general importance: the proper use of significant figures, and a list of words and suggested replacements to improve the manuscript. Science writing is supposed to be objective; do not use "emotional" words to describe things. Scientists are also supposed to be modest. Note that for publication in a peer-reviewed journal, the work needs to be innovative and/or novel. You do not need to tell us that in the text.

When you move from citing the literature to your work, the specification "in this study" may be helpful. Otherwise, it is simply redundant. Please look for other redundancies and extra words – "results obtained" can often be simply "results."

III. English tenses: What is past tense and what is present tense
Your work and the work reported in the literature are generally presented in the past tense. Conclusions can be past or present tense, although Food Bioscience generally prefers past tense. Figures and tables in the paper are referred to in the present tense as they are part of the paper, but are based on work done in the past, e.g., "Figure 1 shows that X is significantly higher (p <0.05) than Y." But: "X was significantly higher (p <0.05) than Y." Definition of terms in an equation are also present tense, i.e., A is absorbance.

IV. Wordiness

Shorter and tighter writing is easier to read. Expressions like "in this study", "the results?" and the listing of samples should not be repeated. Consider expressions like "ultrasonic procedure (method, technique, process)." Does it need the extra word or could it just be expressed as "ultrasound"? Leaving those words out often improves the readability. The goal is to help the reader. It is easier for readers if the same words are used throughout. Scientific writing is about good communications not great literature.

Highlights and/or Visual Highlights (Optional)

These both go before the title page.

Elements of a manuscript

Cover letter.

A cover letter must accompany each submission. It must include the following information:

(1) The brief explanation of the significance of the work presented in the manuscript

(2) The names and contact information for three potential referees

Title page.

Title: Try to keep the title short (<20 words) and not try to tell the whole story in one sentence. Start strong by not using words like "A study of the effects of". Rework so the first thing a reader sees are words related to the topic.

Running Title: This should be under 80 characters including spaces. Shorter is better.

Authors: All authors should have made a SIGNIFICANT contribution to the paper. Others involved in the work should be thanked in the acknowledgment. This is a controversial subject so it also needs to be consistent with the requirements of the country (countries) where the work was done.

Author Affiliation: This does not require full mailing address. The city, state/province, and country along with a postal code are appropriate.

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Abstract.

The abstract should be an independent story that can stand alone: What you did, why you did it, how you did it and what the results are. Abbreviations are created only if used in the abstract and ideally should be minimized. Any abbreviation used without definition should be widely known, even
by graduate students entering the field. The abstract does not usually have any references. Note that 
abstracts may be circulated without the paper itself. The abbreviations used in the abstract do NOT 
carry over to the rest of the manuscript.

No small "s" at the end of an abbreviation in the abstract or the text, e.g., CFUs.

It is assumed that any results in the abstract are statistically significant.

The abstract starts on a new page and should be <250 words.

Keywords.

Since keywords must be strong search terms, focus on words that will NOT give thousands of hits. The 
key materials are a good place to start (including their Latin name and common names as separate 
keywords). Methods are generally not good search terms unless you are developing them.

The keywords appear on the same page as the abstract.

List of Abbreviations (Optional)

If a list of abbreviations is included, it goes after the keywords. The list of terms should be 
alphabetized.

Most abbreviations are all capital letters (with no small "s" at the end); but when defining them, the 
words themselves are often not capitalized. E.g., differential scanning calorimetry (DSC).

Introduction.
The introduction starts a new page. The introduction only includes the material that is necessary for 
understanding the paper: why the food material you are studying is worth studying and a little about 
it. What is the background for the research questions you are asking? By the time you get to the 
objectives (the last part of the introduction), it should almost be obvious from the introduction. The 
introduction is NOT a review paper.

If you have a really good review in your thesis/report, then consider preparing it as a "review" paper. 
Food Bioscience is willing to consider review papers. This style guide should still be used even though 
the organization of such a paper is different and a few aspects of this guideline are not relevant.

References in the Text

References in the text should use "et al."for 3 or more authors. If the authors are in the sentence 
the format should be: "Jones et al. (2018) found..."[et al. can be italicized if you like.] If the whole 
reference is in parentheses, the comma may or may not be added after "al.", but consistency is 
required within the paper, i.e., (Jones et al. 2018) or (Jones et al., 2018) for every reference. Other 
examples: (Zhang, 2012) or (Zhang 2012) and (Jones and Zhang 2015), (Jones and Zhang 2015), 
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The ampersand (&) can only be used within parentheses, but not in the text, so Jones and Zhang 
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In a list of multiple references in parentheses, please alphabetize by the first author's last name 
and then chronologically, i.e., Allan, 1996; 1999; Allan and Jones, 1995. Please use a semi-colon (;) 
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Materials and methods

Although often thought of as the most boring section of a scientific paper, in many ways this is the most 
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How was the identity of the material validated?

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Storage of materials

All materials that are stored for more than one day should include something like the following: "for a maximum of XX wk" (or what the storage time actually is).

Sourcing of materials: What information is needed All equipment and chemicals used should be identified clearly. Any non-routine reagents must be sourced along with all equipment used. The model information goes before the company information. The company's full legal name (generally capitalizing the significant words but not every letter in the company name) must be given and then its location, but the location is only given the first time the company is mentioned. Location should almost always be put in parentheses. If the product is obtained through a distributor but is clearly from a different company, the original company is the company of record. Each instrument needs to be identified only once unless more than one similar piece of equipment was used, e.g., two different centrifuges. (Abbreviations: Co. = Company; Corp. = Corporation, Inc. = Incorporated, Lab. = Laboratory.) This should include a city, state/province and country (and not a street address). For the USA, a state is mandatory and for other countries the state/province information is encouraged, especially for Canada and China. There are official two letter abbreviations for each US state and two and three letter abbreviations for each Canadian province (please stay consistent), and you are encouraged to use these (e.g., Ithaca, NY, USA, Toronto, ONT (or ON), Canada). You may write out the state's name- again, if you do so consistently. Note the preference for USA and US and not U.S.A. and U.S., with USA preferred over US. If the same company is cited with multiple locations, after the first time only the city should be mentioned.

For example, First time: (Sigma Aldrich Co., St. Louis, MO, USA) or Sigma Aldrich Co. (St. Louis, MO, USA). Thereafter (Sigma Aldrich). First time: (Model XYZ, Jiangsu Model Cars Ltd., Wuxi, Jiangsu, China) or Model XYZ (Jiangsu Model Cars Ltd., Wuxi, Jiangsu, China). Thereafter: (Jiangsu Model Cars). Note: Do not use all capital letters in a company name unless the company does so itself. For example, use Titan Corp. and not TITAN Corp.

As this is a Chinese-based journal, we require the use of the Chinese province information. This will help readers become more familiar with China. If the same equipment, chemical or material is used with more than one method, the sourcing is done only the first time. E.g., "A spectrophotometer (XX Corp., Wuxi, Jiangsu, China) was used to?." And subsequently, "The spectrophotometer was used to?"
Standard method versus most actual methods Except for standard methods that are accepted transnationally (with the method number identified), all methods should be described in sufficient detail that a person can follow what was done without having to go on a literature search. Standard methods can be described briefly and the actual equipment used can be noted. The discussion does not have to be in all of the detail needed to reproduce the data if these are covered in the reference for the method or are standard laboratory practices. For example, one can say "brought to 25 mL with distilled water" rather than "added to a volumetric flask and distilled water added to bring it to the 25 mL mark." A reader should not have to read another paper to understand what was done.

In describing methods, it is not necessary to indicate every sample subjected to the method. That information will appear in the results (including tables and figures). Rather than "The FTIR was measured for XX, YY, ZZ and AA using?", use "The FTIR was measured using?"

If a good description of a method is already available, then it can be used if done properly with quotes and proper attribution. Example: The method of Zhang et al. (2012) was used and was briefly described by Liu et al. (2016) as "DESCRIPTION". The key is that quotation marks are used to show it is copied! Note also that the introduction to methods might best be introduced by starting the sentence with "The method of Zhang et al. (2012) was used." Again, this is a standardized format that helps the reader.

**Protein**

The Kjeldahl/Dumas methods measure total nitrogen, therefore the conversion factor must be identified and this is to be identified as crude protein. If a method is based on using bovine serum albumen (BSA) as a standard then it should identified as BSA equivalents. If purity was not determined, please add the phrase "assuming it were 100% pure" for BSA.

Please give each method at least one paragraph.

**Kits**

If you are using a kit, you still need to briefly describe the principle used and the actual method along with how calibration was done, including the units to report results. Please also report on any equipment used that was not part of the kit, e.g., the centrifuge or spectrophotometer.

**Room or ambient temperature**

Room temperature or ambient temperature should be identified. There are often multiple temperatures within a range as most laboratories are not the same temperature all the time. Use either "room" or "ambient" consistently, not both. The actual temperature needs to only be reported at the first mention.

**Units** Units need to be expressed consistently. If using mL, uL, and L, the whole paper should use the capital L but ml, ul and l are also acceptable. Temperature can be 25°C or 25 °C, again consistently. Please use Celsius and no t Kelvin except for an equation that requires Kelvin. If the equipment is actually built to English units, these may be put in parentheses, but the values in the text must be in metric units.

The "U" for units of enzyme or antibiotic activity units should be defined.

The preference is for "a 40 ml flask" rather than "a 40-ml flask," but if the latter is used consistently, it will be accepted.

Except as the first item in a sentence, the preference is for the numbers to be stated before the material, e.g., "Sample (50 mL) was added to 6 mL of 6% ethanol" rather than "Sample (50 mL) was added to ethanol (6 mL of 6%)."

Please use v/w, w/w, and v/v rather than V/W, W/W and V/V. The same holds for bw (body weight), dw (dry weight), ww (wet weight) and fw (fresh weight). These abbreviations do not have to be defined.
Please put a space between the number and M, N, mM, uM, etc.

Percentages have the symbol next to the number, e.g., 40% with no space.

In a sequence with the same units, only the last number has the units attached.

**Mixtures** When describing mixtures with a colon, e.g., alcohol:water at a 3:5 ratio, there is no space before or after the colon.

Note that there is no space for the ratio symbol even with words.

**Manufacturer's information** Information obtained from the manufacturer should be identified as "according to the manufacturer." In particular, standards need to be fully described. Ideally, the number of points in the calibration curve and the regression equation that shows it is a linear function should be provided along with the regression value. Extrapolation versus interpolation needs to be considered. With extrapolation you might be going outside of the linear response region.

If the manufacturer gives a specific cut-off, e.g., "this dialysis tubing has a 3,500 Da cut-off," I suggest adding the word "nominal" to show you recognize that it may not be that accurate, e.g., "has a nominal cut-off of 3,500 Da." (Special note on dialysis tubing: There are many different ways to prepare dialysis tubing, so please share how you prepared the tubing with the readers.)

**Equations**

Equations may be numbered. Normally the numbering is done as (4) on the same line as the equation to the far right. But in the text it should be referred to as Equation 4.

When writing equations, a space before and after the = sign is preferred (e.g., $R = 0.2$) but if you do not want to do this, then both sides of the = sign should not have a space (e.g., $R=0.2$).

E.g.

Using the following equation:

$$A = a \times b \times c$$  \(1\)

where $A = \text{absorbance}$, $a = \text{the absorbance coefficient}$, $b = \text{cuvette pathlength}$ and $c = \text{concentration}$.

Note that equation 1 assumes a linearity of response.

**Chemical Symbols**

The use of standard symbols for atoms is encouraged. These do not have to be defined (e.g., Ca, Fe, NaCl, HCl, NaOH?). But please try to use these consistently. More complex compounds can be described using words.

**Software**

Information obtained from software should be identified as such including which software (ideally including a version number or the year of purchase) with full company information. Software that is an integral component of the instrument but does more than provide the "raw" data should be identified, e.g., "using the software that came with the instrument."

**Peak areas**

If the assumption is that all peak areas are the same for equal amounts of all materials, this should be indicated as a critical assumption. And one needs to determine if this response is for equal weight or equal number of molecules. Therefore, the handling of the data needs to be described. Are peak areas for any one peak linear as a function of concentration? Are you assuming that the peak area of a peak represents the same amount of material as the peak area of the standard?
Centrifugation

Centrifugation should always indicate the "g force" at the bottom of the tube (maximum) and the time and temperature. Ideally tube size is also mentioned on the first use of that rotor. The "rpm" may be put in parentheses.

For example, the first time: the samples were centrifuged at 3,000 x g (1500 rpm in a M2 rotor, Model T centrifuge, Regenstein Centrifuge Co., New York, NY, USA) at 30°C for 20 min. Thereafter with different speed: samples were centrifuged at 2,000 x g (1000 rpm) at room temperature (22 to 25°C) for 1 hr. [Notes: the room temperature is given as a range the first time it is mentioned. If you use a different centrifuge or different rotor you start over and then you do have to indicate thereafter which centrifuge was used.]

Microbes and other biological names  After the first mention with their full Genus species name subsequent uses can be as G. species. This does not have to be defined as an abbreviation.

Important note: Averaging of CFU must be done prior to transforming to log. Log numbers cannot be averaged.

Animals

Please indicate the official approval received for the protocols to use any animals. The feed used should provide more information than "a pelleted feed was used," including either major ingredients or proximate composition.

Sensory Evaluation

If one is using hedonic measurements to evaluate products/samples, the panel should be a "consumer panel" of sufficient size to be meaningful. As a matter of interpretation, a 9 point scale gives the most sensitivity. A value of 7 out of 9 (78%) is probably the minimum that any consumer would give to a product that they would actually consider purchasing. Five and 7 points scales should probably also consider a ~75% score as the minimum for purchase or use. Another way to look at hedonic data is to indicate the percent of consumers who gave scores of 75% or above. With demographic data this can help determine the potential target audience for the product. The assumption that hedonics and other sensory scales are linear, i.e., can be handled like any data, is questionable. Using a trained or semi–trained panel and then asking about overall acceptability is also questionable. Other systems of evaluating products, i.e., with traits specified, are not hedonic scales.

Statistical Analysis

This should be the last section of the methods and materials. It should clearly indicate ALL of the statistics used. One or two way ANOVA should be clearly indicated along with how the means were separated statistically. It should also indicate the software used - treated like any other equipment/chemicals.

Statistical acceptance level (p/P, lower case "p" is preferred) The acceptance level should be indicated. If you are going to use more than one, that should be clearly stated here. And the spacing of the statistical standard should be consistent. Any of the following spacing formats is acceptable as long as the same format is used throughout the paper: (P<0.05); (P <0.05); (P < 0.05); (p<0.05); (p <0.05); or (p< 0.05). I prefer that there be no spaces, but will accept any of the above spacings for statistical significance as long as it is used consistently.

Notes on statistical issues

In the text with regular numbers the < and > signs should be directly attached to the number with no space in-between.

P=0.05 is possible so one of the two directions, i.e., P<0.05 or P>0.05 should be P<0.05 or P>0.05.
Properly speaking one should do everything with one significance level. However, to be realistic, other levels are used. Besides 0.05, one may sometimes want to use 0.01 and 0.001. In the text one only indicates one of these numbers - the actual "P" value can be given in a table if important (Please see the section on significant figures). In that case a wording like this might be appropriate: "Although a P<0.05 was generally used, the authors have also chosen to use 0.01 (and/or 0.001) for some of the data to indicate the greater significance of the differences."

**Correlations** One set of data can be correlated "WITH" another set of data either positively or negatively. Generally, a linear curve fitting should be done, showing the equation and the value of the correlation coefficient or other statistical evaluation.

**Results**

The actual numbers in Tables and Figures should normally NOT be re-reported in the text. Trends need to be statistically significant. An occasional key number might be mentioned. The order of presentation should come in the most logical order – not necessarily as the research was originally done. If one has a single data set like proximate composition of the starting material – it can go in the text and does not need a special table. If one puts data only in the text, then the standard deviation is needed in the text.

Please do not put methods in the results section.

Please do not feel that every sample has to be mentioned in full detail. Once you have established the "framework," the text can be simplified and that actually makes it clearer. You do not have to start each section by reminding everyone of the samples being studied. You also do not need to review the method again.

Please do not constantly say "In this study,""As can be seen," "The results showed" and similar terms unless you are going from the discussion of another paper and returning to your paper and it is not clear that you are making that transition back to your work. In reporting other studies, it generally is simpler to list the reference: "Chen et al. (2005) showed" and then talk about the actual results instead of "and it was reported that ? (Chen et al., 2016)".

References to the Tables and the Figures (or Fig.) should be capitalized. If more than one figure, use the word Figures only once (e.g., Figures 1 and 4).

Please use "these results" rather than "this result."

**Discussion**

The discussion should focus on the significant changes observed and why they are important. Generally, each experiment should be discussed and then the multiple methods brought together. Suggestion: If the work is applied work, do not try to go into mechanistic claims – it is not relevant, and confuses and devalues the actual work.

It should explore the significance of the results of the work, not repeat them. It should integrate your findings in a comprehensive picture and place them in the context of the existing literature. A combined Results and Discussion section can be appropriate. Avoid extensive citations and discussion of published literature.

**Conclusion**

This is not a summary. It should focus qualitatively on the key results, why they may be important, and what are the limitations of these results. Suggestions for further work are also appropriate. This should generally be kept to < 250 words.

**Conflict of Interest**

**Conflict of Interest**
Please use the following statement (if true) or a similar statement. Otherwise please bring to our attention any special issues that we need to be aware of. "The authors confirm that they have no conflicts of interest with respect to the work described in this manuscript." Note that any consulting or business ties with any company that might benefit from your research needs to be reported.

Acknowledgements

Please acknowledge all funding (including project numbers where possible) and also thank all those who have contributed to the work who are NOT authors including those involved with the writing. (Even if someone is "paid" to do something, they should be recognized here.)

Contributions of Authors (Optional)

This can be included at this point in the manuscript.

Tables

The title should clearly define the content. Footnotes should deal with abbreviations and the statistics. Be careful to identify what is covered by the statistics, e.g., by rows or by columns. In many cases the statistics should be done in both directions. Think about the direction of the table - what is horizontal versus what is vertical. The horizontal should usually be fewer entries than the vertical. Generally, the horizontal shows the "methods" and the vertical shows the samples. Tables can be done single spaced.

Figures and tables are shown one/page.

Authors should take notice of the limitations set by the size and layout of the journal. Large tables should be avoided. Reversing columns and rows will often reduce the dimensions of a table. If a large amount of data needs to be presented, an attempt should be made to divide the data over two or more tables.

Table requirements

(1) Supply units of measure at the heads of the columns. Abbreviations that are used only in a table should be defined in the footnotes to that table.

(2) Should always use rows and columns to correlate two variables. Tables should be submitted single-spaced with appropriate open space in Word. Do not embed tables as graphic files, document objects, or pictures.

(3) Tables should have three “major” horizontal lines: one under the legend, one under the column heads, and one below the body. Vertical lines are generally not used.

(4) Label each table at the top with a Roman numeral followed by the table title. Insert explanatory material and footnotes below the table. Designate footnotes using lowercase superscript letters (a, b, c) reading horizontally across the table.

(5) Unless needed, the first letter of words within the tables should be capitalized.

(6) Must be sequentially numbered and referred to at least once in the text.

Figure legends

The written material for all figures should appear here with full details. The figure legend goes BEFORE the actual figures. If there are any supplemental figures, they also require a figure legend page. Only the figure number should be shown with the actual figure. The figure legend page should be double spaced like the rest of the text.

Figures
Graphs should be practically self-explanatory. Readers should be able to understand them at a glance. Dimensional drawings and diagrams should include only the essential details and as little lettering as possible. They should present more of a picture than a working drawing. If there is a need to present a construction drawing, please consult with the editor ahead of time.

Figure requirements

(1) Numbering and title: number all figures (graphs, charts, photographs, and illustrations) in the order of their citation in the text and cited as, e.g. Figure 1 (writing out the word “Figure”). Use (a), (b), (c)... to give titles for subfigures if there are any.

(2) Figure quality: should be sharp, noise-free, and of good contrast. All lettering should be large enough to permit legible reduction.

(3) Color of figures: unless necessary, it is best to use black and white for line-drawings; and a grayscale for images.

Many figures still need statistics

The figures that present data still need proper statistics, for example, plots of lines should have statistics both in terms of changes along the X axis for a single line and differences between lines at the same value of X in addition to the error bars, especially if there are statistically significant differences.

Bar graphs and similar presentations almost always need a proper statistical analysis.

Putting data into a figure (line drawings) is not an excuse to not do the proper statistical analysis. Please be sure to explain the statistics used in the figure legends.

Note that many people start a paper by looking at the figures before deciding if they will read the whole paper, so it is okay to not use abbreviations. However, details about methods are not appropriate, including details of the statistical tests used.

These should only appear with their Figure number. Please do not duplicate the figure legends on the pages with figures.

The use of color

Please think carefully about the use of color. We are still a print journal and there is a significant supplemental cost for printing color, which is born by the authors. Consider how it would look in black and white?

Abbreviations

Do not use abbreviations in the title or abstract and limit their use in the text. Expand all abbreviations at first mention in the text. The Journal’s website will have a list of abbreviations that do NOT require writing out even the first time.

An abbreviations can only be used after it has been defined after its first use. It can be written out again in the Tables and Figures if you wish. Abbreviations can be used both as singular and plural. So there is no need for a little "s" at the end of any abbreviation. Since the abstract stands alone, it requires the same guidelines for the use of abbreviation that apply to the paper itself. Abbreviations do not carry-over to the rest of the document where the abbreviations need to be re-established. If you use a list of abbreviations (a nice idea), please alphabetize and try to include all abbreviations used in the paper. Please place this immediately after the keywords.

Please use v for volume, w for weight, d for dry, f for fresh, b for basis, and rpm for revolutions/min as units for measurements. [Note that all are lower case.]

Time Abbreviations

s or sec, min, h or hr, d or day, wk, yr
Abbreviations for "Company"

Co., Corp., Ltd. (Note that the period is used in these cases.)

Molecular weight abbreviations

Please use MW for molecular weight as Mw could be used for weight average molecular weight.

"That is" and "for example" abbreviations

"I.e., and, e.g., each have a comma before and after.

Less-than, equal and more-than abbreviations, especially for statistical significance

The symbols >, <, ≥ and ≤ go directly with a number, e.g., <2.0. Note that in the case of p/P for statistical significance that p<0.05 and p≥ 0.05 must be used; the equal case should not be forgotten. One could also use p≤0.05 and p>0.05. The spacing of this information should be consistent throughout the text.

Specific requirements

Temperature: The temperature in Celsius is written as 10°C, with no space between the number and the degree sign.

Percentage is written with no space between the number and the symbol: It was 10% of the...

Molarity and normality are written with no space between the number and the symbol: The solution was 10M NaCl and could also be called 10N NaCl.

Chemical compounds: the chemical symbols can be used without prior definition so NaCl is preferred over salt, and other simple compounds should be listed using their chemical formula.

Significant Figures

All numbers in science can be expressed as 1.2345 x 10^n. The number shown is 5 significant figures. For biological materials, where the variability is great and one has such a limited sample, even with measurements of high precision, it is probably not justifiable to have more than three significant figures, e.g., 1.23 x 10^n. This is the rule for Food Bioscience, i.e., no more than 3 significant figures for results even if reporting the results from other authors.

Remember this is only the precision of the measurement and says nothing about the accuracy or the ability to use that number to generalize for the materials being studied.

Exceptions: IR data can be 4 significant figures, i.e., 3725 cm⁻¹. Statistical results may also be 4 significant figures. Weight may also be more significant figures, but remember that routine weighings have an inherent error. Molecular weight and time using a mass spectrometer may also justify more significant figures, but, no more than 2 places after the decimal point.

Not even three significant figures can be justified in some cases as the standard deviation is simply too great. Note that the zero (0) in certain positions is not significant while in other places it is significant, e.g., for 350 the zero is not significant, but for 350.0 both zeroes are significant.

Note: Significant figures

Please refer General Language and Formatting

SI units
There are seven, dimensionally independent, base SI-units and two supplementary units. All other units can be derived from the base ones. Below, you can find the list of the base SI units as well as the list of the derived units.

E.g., 1 revolutions per minute is equal to 0.0167 hertz (Food Bioscience prefers that you retain the term rpm.) Concentration: mol/l

**SI base units**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Symbol</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meter (metre)</td>
<td>m</td>
<td>Length</td>
</tr>
<tr>
<td>Kilogram (kg)</td>
<td>kg</td>
<td>Mass</td>
</tr>
<tr>
<td>Second (s)</td>
<td>s</td>
<td>Time</td>
</tr>
<tr>
<td>Ampere (A)</td>
<td>A</td>
<td>Electric current</td>
</tr>
<tr>
<td>Kelvin (K)</td>
<td>K</td>
<td>Thermodynamic temperature</td>
</tr>
<tr>
<td>Mole (mol)</td>
<td>mol</td>
<td>Amount of substance</td>
</tr>
<tr>
<td>Candela (cd)</td>
<td>cd</td>
<td>Luminous intensity</td>
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**SI Supplementary Units**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Symbol</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Rad (plane angle)</td>
<td>rad</td>
<td>Plane angle (2D angle)</td>
</tr>
<tr>
<td>Steradian (sr)</td>
<td>sr</td>
<td>Solid angle (3D angle)</td>
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</table>

**SI derived units**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Symbol</th>
<th>In SI units</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pascal (Pa)</td>
<td>P</td>
<td>Pressure, Stress</td>
<td>jkg m⁻¹ s⁻²</td>
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<td>Joule (J)</td>
<td>J</td>
<td>Energy, Work</td>
<td>kg m² s⁻²</td>
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<td>Watt (W)</td>
<td>W</td>
<td>Power</td>
<td>kg m² s⁻³</td>
</tr>
<tr>
<td>Newton (N)</td>
<td>N</td>
<td>Force, Weight</td>
<td>kg m s⁻²</td>
</tr>
<tr>
<td>Tesla (T)</td>
<td>T</td>
<td>Magnetic Field</td>
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<td>μF</td>
<td>Electric Charge</td>
<td>m² s⁻³ A⁻¹</td>
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<tr>
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<td>Voltage</td>
<td>s⁻¹ A</td>
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<td>Electric Resistance</td>
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<tr>
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<td>Illuminance</td>
<td>cd sr m⁻²</td>
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<tr>
<td>Luminous Flux (lm)</td>
<td>lm</td>
<td>Luminous Flux</td>
<td>cd sr m⁻²</td>
</tr>
<tr>
<td>Becquerel (Bq)</td>
<td>Bq</td>
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<td>s⁻¹</td>
</tr>
<tr>
<td>Gray (Gy)</td>
<td>Gy</td>
<td>Equivalent Dose</td>
<td>s⁻¹</td>
</tr>
<tr>
<td>Sievert (Sv)</td>
<td>Sv</td>
<td>Equivalent Dose</td>
<td>s⁻¹</td>
</tr>
<tr>
<td>Hertz (Hz)</td>
<td>Hz</td>
<td>Frequency</td>
<td>kHz</td>
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</tbody>
</table>

**Database linking and Accession numbers**

Elsevier aims at connecting online articles with external databases which are useful in their respective research communities. If your article contains relevant unique identifiers or accession numbers (bioinformatics) linking to information on entities (genes, proteins, diseases, etc.) or structures deposited in public databases, then please indicate those entities according to the standard explained below.

Authors should explicitly mention the database abbreviation (as mentioned below) together with the actual database number, bearing in mind that an error in a letter or number can result in a dead link in the online version of the article.

Please use the following format: Database ID: xxxx

Links can be provided in your online article to the following databases (examples of citations are given in parentheses): • GenBank: Genetic sequence database at the National Center for Biotechnical Information (NCBI) (GenBank ID: BA123456) • PDB: Worldwide Protein Data Bank (PDB ID: 1TUP) • CCDC: Cambridge Crystallographic Data Centre (CCDC ID: A1631510) • TAIR: The Arabidopsis Information Resource database (TAIR ID: AT1G01020) • NCT: ClinicalTrials.gov (NCT ID: NCT00222573) • OMIM: Online Mendelian Inheritance in Man (OMIM ID: 601240) • MINT: Molecular INTeractions database (MINT ID: 6166710) • MI: EMBL-EBI OLS Molecular Interaction Ontology (MI ID: 0218) • UniProt: Universal Protein Resource Knowledgebase (UniProt ID: Q9H0H5)

**Highlights**

Highlights are optional yet highly encouraged for this journal, as they increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: example Highlights.

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

**Formatting of funding sources**

List funding sources in this standard way to facilitate compliance to funder's requirements:
Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Math formulae**

Please submit math equations as editable text and not as images. Present simple formulae in line with normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

**Footnotes**

Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

**Artwork**

*Electronic artwork*

**General points**

- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.
- Ensure that color images are accessible to all, including those with impaired color vision.

A detailed guide on electronic artwork is available.

You are urged to visit this site; some excerpts from the detailed information are given here.

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References

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