**Manuscript formatting requirements**

This is the formatting requirements check list for pre-accepted manuscripts, please check each section carefully.

[ ]  **Article Types**

***iMeta*** welcomes submissions in the following 11 article types, see table below for details and demo files.

|  |  |  |  |
| --- | --- | --- | --- |
| Article Type | Description | Word Limit | Demo |
| Research Article | Reports of new research findings or conceptual analyses that make a significant contribution to current knowledge | 3000~6000 words， 4~6 figures & tables | [PDF](https://onlinelibrary.wiley.com/doi/epdf/10.1002/imt2.2) |
| Short Communication | Brief observations and research reports in a concise format | 1500~3000 words, 2-4 figures & tables | [PDF](https://onlinelibrary.wiley.com/doi/epdf/10.1002/imt2.5) |
| Review Article | Overview of developments in fields and emphasis, more factual and less on opinion | 3000 ~ 12000 words, 3~6 figures & tables | [PDF](https://onlinelibrary.wiley.com/doi/epdf/10.1002/imt2.8) |
| Perspective | Personal opinions on a topic enhances the understanding of the subject | 1500 ~ 6000 words, 2-4 figures & tables | [PDF](https://onlinelibrary.wiley.com/doi/epdf/10.1002/imt2.4) |
| Method | Procedural method in the design and implementation of an experiment or study | 3000 ~ 12000 words, 4~6 figures & tables | [PDF](https://onlinelibrary.wiley.com/doi/epdf/10.1002/imt2.143) |
| Protocol | Procedural protocol in the design and implementation of an experiment or study | 3000 ~ 12000 words, 4~9 figures & tables | [PDF](https://onlinelibrary.wiley.com/doi/epdf/10.1002/imt2.13) |
| Announcement | Sharing factual information or acknowledgements of large projects | 800~1500 words, 1 figure, no abstract, 15 references | [PDF](https://onlinelibrary.wiley.com/doi/epdf/10.1002/imt2.22) |
| Commentary | Expert opinion from people on a published work or on the current research field, has references | 800~1500 words, 1 figure, no abstract, 15 references | [PDF](https://onlinelibrary.wiley.com/doi/epdf/10.1002/imt2.12) |
| Correspondence | A letter to raise a point of interest, discuss a difference of opinion or encourage participation | 800~1200 words, 1 figure, no abstract required, 10 references | [PDF](https://onlinelibrary.wiley.com/doi/epdf/10.1002/imt2.6) |
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| Abstracts | Abstracts of conference papers, or a series of thematic reports | 10-50 abstracts, 1 cover figure, 10 references | [PDF](https://onlinelibrary.wiley.com/doi/epdf/10.1002/imt2.153) |

[ ]  **Upload file list**

1. Manuscript in one single Word file (**not including figures,** but including main tables)

2. Graphical Abstract, figures in separated files (text editable, pdf/pptx/ai), **one figure per PDF file**

3.Supplementary Information (If applicable): Supplementary text and figures in **one single Word file**，Supplementary tables in **one multi-sheet Excel file**

4. ETHICS STATEMENT (If applicable): single PDF file

[ ]  **Manuscript template overview**

The manuscript template is showing at the bottom of this document. iMeta manuscript consists of the following sections:

 [ ]  Title: < 200 characters

 [ ]  Running title: < 80 characters

 [ ]  Authors & Affiliates: First and last name in full; affiliates in numerical order, no numerical order if one affiliate

 [ ]  Abstract: <300 words, not structured

 [ ]  Keywords: 3~7 words or phrases

🞎 Graphical Abstract: <150 words as the figure legend of the graphical abstract, can be the same to highlights

 [ ]  Highlights: 3~4 short sentences

 [ ]  Introduction: ~3 paragraphs

 [ ]  Methods: Methods are as reproducible as possible, with subheadings, and protocols in Supporting Information

 [ ]  Results: with subheadings, and recommend each subheading with one figure

 [ ]  Discussion: independently, or combined with the results

 [ ]  Conclusion: summary of the article

 [ ]  Acknowledgments, Competing interests, Author contributions: write it truthfully

 [ ]  Data availability statement: Sequencing data in Data Center, scripts in GitHub or Gitee

🞎 Ethics statement: Required for human and animal studies, or No animals or humans were involved in this study

 [ ]  Reference: numerical order, recommend format by [Endnote style](http://www.imeta.science/iMeta/Papers/1Template/iMeta.ens)

 [ ]  Supporting Information: List of files, title of supplementary figures and tables

 [ ]  Figure legends and tables: Figure legends of main figures, as well as the tables are in the end in the manuscript

Please format the manuscript using the template attached below. The default font is **Time New Roman, font size 11**. Manuscript is justified in Word. The paragraph format is as the following: set the manuscript title as paragraph outline level 1, main headings (such as abstract, introduction, result, conclusion, method) as outline level 2, and the subheadings under the result and method sections as outline level 3. Please add necessary subtitles to tables in Word or Excel. Please note subtitles should **NOT** be numbered.

In addition, gene names should be italicized. The letter p of the p value should be italicized. Add comma every 3 digits for values larger than 9999 only. revise “X” to “×” to indicate fold. Use comma when describing three or more items in a row. E.g, "A, B, C, and D ", please note that there is a comma "," before the last "and". Please also pay attention to space issue around symbols; e.g., a space is needed before and after “<”. Name all equations in the order of first appearance when applicable.

[ ]  **Graphical abstract and highlights**

**Graphical abstract:** introduction to the full text of the article, summary/concept/model diagrams, etc., size recommended 16:10 one-page widescreen PPT; the exact size is 248 × 155 mm in AI, or resolution 3200 × 2000 dpi. Representative results or summary model diagrams in the article can be directly used as graphical abstracts. Submit as a separate vector image, such as PDF, EPS, PPTX, etc. Graphical abstract should have a figure caption with < 150 words, can be same to the highlights.

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**Highlights:** 3-5 sentences, describing research findings, summary, method functions or key points, etc. Try to correspond with the graphic abstract as much as possible. Highlights should be written after Keywords in the manuscript.

[ ]  **Figure**

The total number of the manuscript figures must be no more than 7, and no limit on the supplementary figures. **The figure default font is Arial, not in bold, with panel index (A/B/C) 10 pt and main text font size 8 pt, respectively**; can be adjusted according to the layout. The minimum font is recommended to be > 5 pt. It is recommended to use Adobe Illustrator to typeset in two columns under the Letter paper page, and save each picture as a PDF vector format. Alternative PPTX, EPS format is also acceptable.

Adobe Illustrator template file: <http://www.imeta.science/iMeta/Papers/1Template/iMetaFigureTemplate.ai>

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Figures should be improved to comply with journal formatting style and to increase visual attraction (Detail in Article types). **Remove figure titles and the associated figure legends from the figure files.** Each figure is recommended to be in the same page with related content, if possible. Please provide high-resolution figures with editable contents. If figures were taken or adopted from previous publications, please obtain the permission to use the figures and state this accordingly in the figure legends section.

Graphical abstract and figures (**NOT** Supplementary figures) should be uploaded one by one and numbered according to its order in the main text. Check whether all figures (including supplementary figures) are mentioned in the main text and numbered in the order of first appearance. When there are multiple panels in the same figure, panels should be described alphabetically (A/B/C) in the main text. Check whether all figures/tables (including supplementary ones) mentioned in the main text match with the respective actual figures/tables in terms of name, content, order, and numbers. Check whether all figures were described and matched the content in figure legends.

[ ]  **Table**

In main text, table is **NOT** recommended. If necessary, table should be shown with proper formatting ([Example](http://www.imeta.science/iMeta/Papers/1Template/Table.pdf)). Present main tables in Word. For supplementary tables, present all of them in the multiple-sheet Excel ([Example](http://www.imeta.science/iMeta/Papers/1Template/TableS.xlsx)), add title for each sheet. A table note can be added to provide additional information (including defining abbreviations) to help understand the content shown in the table and to make tables self-explanatory; present the note as a single paragraph below the table for small tables or above the tables if the tables contain too many lines.

[ ]  **Title page**

In the title page of the manuscript, please indicate the corresponding author (\*) and label all equal contribution authors (#) in the authorship line. Double check the name of all authors and their affiliations (note: after the name of institution, only city name, postal code, and country name should be listed) for accuracy. Affiliations should be numbered according to the order of first mention in the authorship line. Number in authorship line and address line is **NOT** required for single affiliation. If the work presented involves research activities of author at multiple affiliations, list all affiliations; if author moved afterwards, list the previous affiliation and add a note for the present address in footnote. Please note, a signed authorship change agreement form is required for any changes in authorship or affiliations. List the counts of words, references, tables and figures, supplementary figures, and supplementary tables. Also, list the counts of letters in the article title (below 200 characters) and running title (below 80 characters), as well as count of keywords (3~7 words) and words in Abstract (below 300 words).

[ ]  **Article rules**

The article title should be concise and match closely with the content presented. Present the content for concise and logical organization and ensure clarity, provide sufficient technical or methodological details for easy understanding, and avoid lengthy discussion. Subtitles in Results section and figure titles should be informative and deliver the main finding.

[ ]  **Methods**

Provide an overview of the experimental and analytical procedures in the Methods. Software and databases must provide version (If not available, provide download date). Statistical analysis and visualization processes, scripts written by yourself, and data tables corresponding to the figures in the article must be uploaded to GitHub or Gitee, and also declare the links in Data availability statement. If the experimental procedure is too complicated to be reproduced by the method, protocols need to be provided in the Supporting Information: to confirm that the study is reproducible. For used equipment, reagents, and consumables, please provide the catalog No, name and location (city and country name; for those in USA, only provide city and state abbreviations without USA; for those in China, no need to mention the name of province; list location info only at the first mention of the manufacturer) of manufacturer for the key reagents or equipment.

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[ ]  **Acknowledgments**

In Acknowledgments section; please provide the owner, and full name (including country name) of the program and grant No. if possible. Merge the info in “Funding” section into "Acknowledgments" section; check the accuracy of the names for the programs and funding agencies. Also acknowledge people who provided help or assistance for the manuscript.

[ ]  **Competing interests**

In Competing interests’section, declare any conflicts of interests. Most national funding supported program no competing interests. As foremployment, stock ownership, patents etc. need to be declare. For more info about Competing interests, please check <https://www.elsevier.com/__data/assets/pdf_file/0007/653884/Competing-Interests-factsheet-March-2019.pdf>.

[ ]  **Data availability statement**

In Data availability section, only list **NEW** data or code generated in the current study. For data from previous studies, provide data accession No. and describe them in the Method section. Format the database accession numbers mentioned in the main text accordingly for proper data link. Make sure all data are accessible once the manuscript is released online. For public data storage centers, NCBI/EBI/GSA, etc. are optional. It is recommended to upload to GSA (https://doi.org/10.1016/j.gpb.2021.08.001) for easy download and use in the world's most populous Asia-Pacific region.

[ ]  **ETHICS STATEMENT**

The ethics application (No. xxxxxx) was approved by the Research Ethics Committee of the Institute / University of XXXXXX. All manuscript must provide this section.

No animals or humans were involved in this study. (If Not applicable)

Example see: <https://ripeta.com/anatomyethicalapproval/>. More example sees: <https://arriveguidelines.org/arrive-guidelines/ethical-statement/14/example>.

All Ethical Approval files need upload in the system as “Additional File for Review but **NOT** for publication”.

[ ]  **References**

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1. Michel-Mata, Sebastian, Xu-Wen Wang, Yang-Yu Liu, Marco Tulio Angulo. 2022. “Predicting microbiome compositions from species assemblages through deep learning.” *iMeta* 1: e3. <https://doi.org/10.1002/imt2.3>

2. Chen, Tong, Yong-Xin Liu, Luqi Huang. 2022. “ImageGP: An easy-to-use data visualization web server for scientific researchers.” *iMeta* 1: e5. <https://doi.org/10.1002/imt2.5>

3. Huang, Yina, Jinxin Liu, Hein Min Tun, Catherine Stanton, Tingtao Chen, Hani El-Nezami, Hua Wei,et al. 2022. “Gut microbiota insights into human adaption to high-plateau diet.” *iMeta* 1: e6. <https://doi.org/10.1002/imt2.6>

Note: reference format: 1st author (last name, first name in full), 2-10th author (first name, last name in full, comma separated, only show first 7 authors if more than 10), et al. publication year. “Title”. Journal name (italicized). Volume: start-end page or elocator. https://doi.org/DOI

[ ]  **Supporting Information**

In Supporting Information section, include titles and legends of supplementary figures and tables (named in the form of Figure S1, Table S1), as well as titles of supplementary files, movies (named in the form of File S1, Movie S1, respectively). Please note, supplementary file is an independent file type to present supplementary text, aside from supplementary figure or table. Format the Supporting Information section as for the Figure legends section as below. We suggest that all the supplementary text, figures in one Word file, with figures in word supporting vector graphic format emf/wmf, and all the supplementary tables in [one multi-sheet Excel file](http://www.imeta.science/iMeta/Papers/1Template/TableS.xlsx).

[ ]  **Figure legends**

In Figure legends section, include titles and legends of figures, as well as table titles and notes; keep the figure/table title concise and **provide enough details in figure legends or table notes to make all figures/tables self-explanatory;** define all abbreviations used. Legend for each figure should be presented as a single paragraph below the line of figure title. Table notes should be included in the Figure legends section. In figures, add concise panel titles if multiple similar panels are presented in the same figure; try to use the consistent color codes across different panels.

[ ]  **Language editing**

**NO** typos or grammar errors should be present in the manuscript; please seek help from native English speakers or professional editing services for the language issue; proofread the manuscript carefully to fix the typos and grammar errors. Pay special attention to tense and voice usage in different contexts; also pay attention to the missing space (e.g., before and after “=”), as well as italicization and capitalization for consistency, especially in the names of species, genes, or tools. Break the long sentences into shorter ones for easy understanding. Attention is also needed for the proper usage of hyphen, dash and minus symbol. Note: English dash **NOT** hyphen should be used to indicate range or connect two equivalent nouns. Provide proof of evidence for such service or acknowledge the persons for help with language.

[ ]  **Cover letter**

If the manuscript was submitted previously, please list the main changes in bullet points; if have the preprint version, please provide DOI; and provide phone number (office and/or cell phone) and homepages of ALL corresponding authors. Please also indicate the actual article type in the cover letter, if this is a submission to a special issue, please select in S1M and mention it. If this is an invited submission, please mention it as well, including the name of the person who sent out the invitation.

[ ]  **Author's response letter**

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Try to avoid using custom or unusual abbreviation. There is **NO** Abbreviations section. Abbreviations should be defined at their first use in Abstract, main text, figure legends, and table notes **SEPARATELY**. Define the abbreviations in the form of “full name (abbreviation)” in abstract and main text, in the form of “abbreviation, full name” in figure legends and table notes at the **FIRST** appearance. Use abbreviations in following text after definition. Do not define abbreviations repeatedly or define in subtitles or figure/table titles; avoid using abbreviations in article title or keywords. Use either the full name in figures or the abbreviations and define the abbreviations in the figure legends. Note: do not capitalize the first letter of each word in the full name unless proper nouns are used; pay attention to the consistency between full name and abbreviation in terms of singular or plural form used.

Research Article (4~6 figures) / Short Communications (1~3 figures)

**Title (< 200 character)**

**Running title**: xxx (< 80 character)

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2Institute of xxx, Chinese Academy of Sciences, Beijing, China

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**Abstract**

150 ~ 300 words

**Keywords:** data, 3 - 7 keywords

**Graphical Abstract**

This is the figure legend of the graphical abstract (<150 words), can use the highlights (bulletin points) if prefer.

**Highlights**

* Sentence 1.
* Sentence 2.
* Sentence 3.

**INTRODUCTION**

Paragraph 1 [1,2].

 Paragraph 2.

 Paragraph 3.

**RESULTS**

**Result 1**

Paragraph 1.

 Paragraph ...

**Result 2**

Paragraph 1.

Paragraph ...

**Result …**

Paragraph 1.

Paragraph ...

**DISCUSSION**

Paragraph 1.

Paragraph ...

**CONCLUSION**

Paragraph 1.

**METHODS**

**Method 1**

Paragraph 1.

 Paragraph ...

**Method 2**

Paragraph 1.

Paragraph ...

**AUTHOR CONTRIBUTIONS**

Tong Chen did the experiments, analyzed data, and wrote the manuscript. Yong-Xin Liu analyzed data and revised the manuscript. Luqi Huang supervised this project. All authors have read the final manuscript and approved it for publication.

**ACKNOWLEDGMENTS**

We would like to thank Dr. xxx and Prof. xxx in xxx University / Technology co., LTD for their help on xxx. This work was supported by grants from xxx (grant ID), the National Natural Science Foundation of China (grant ID).

**CONFLICT OF INTEREST STATEMENT**

The authors have declared no competing interests.

**DATA** **AVAILABILITY STATEMENT**

All the sequencing data have been deposited in GSA/EBI/NCBI under submission number xxx (metagenome sequencing), BioProject accession number PRJxxx. The data and scripts used are saved in GitHub <https://github.com/xxx/xx>x (Example can be found at https://github.com/YongxinLiu/Zhang2019NBT) or Gitee <https://gitee.com/xxx/xxx>. Supplementary materials (figures, tables, scripts, graphical abstract, slides, videos, Chinese translated version and update materials) may be found in the online DOI or iMeta Science <http://www.imeta.science/>.

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**ETHICS STATEMENT**

The ethics application (No. xxxxxx) was approved by the Research Ethics Committee of the Institute / University of XXXXXX. All manuscripts must have this section.

No animals or humans were involved in this study. If not applicable.

Example see: <https://ripeta.com/anatomyethicalapproval/>. More example see: <https://arriveguidelines.org/arrive-guidelines/ethical-statement/14/example>.

All Ethical Approval files need upload in the system as “Additional File for Review but NOT for publication”.

**REFERENCES**

1. Liu, Yong-Xin, Yuan Qin, Tong Chen, Meiping Lu, Xubo Qian, Xiaoxuan Guo*, et al.* 2021. “A practical guide to amplicon and metagenomic analysis of microbiome data.” *Protein & Cell* 12: 315-330. <https://doi.org/10.1007/s13238-020-00724-8>

2. Bolyen, Evan, Jai Ram Rideout, Matthew R. Dillon, Nicholas A. Bokulich, Christian C. Abnet, Gabriel A. Al-Ghalith*, et al.* 2019. “Reproducible, interactive, scalable and extensible microbiome data science using QIIME 2.” *Nature Biotechnology* 37: 852-857. <https://doi.org/10.1038/s41587-019-0209-9>

**SUPPORTING INFORMATION**

The online version contains supplementary figures and tables available.

Figure S1 Xxx.

Figure S2 Xxx.

Figure Sn Xxx.

Table S1 Xxx.

Table S2 Xxx.

Table Sn Xxx.

**Figure legends and tables**

**Figure 1 title.** (A) xxx. (B) xxx.

**Figure 2 title.**

**Table 1 title ()**

|  |  |  |  |
| --- | --- | --- | --- |
| **Stress** | **Regulator /genes/Key factors** | **Host** | **Effect on the microbiota** |
| Not tested | FERONIA | *Arabidopsis* | Inhibiting fluorescent Pseudomonads coloniation |
| Nitrogen deficiency | NRT1.1 B | *Oryza sativa* | Maintain the abundance of microbes with ammonification functions |
| Drought | Unclear | Sorghum | Monoderm bacteria (Especially Actinobacteria) |
| Drought | Unclear | *Oryza sativa* | Actinobacteria (*Streptomyces*) |