



Accu16S/AccuITS: Accurate and broadly applicable amplicon sequencing for absolute microbiome quantification

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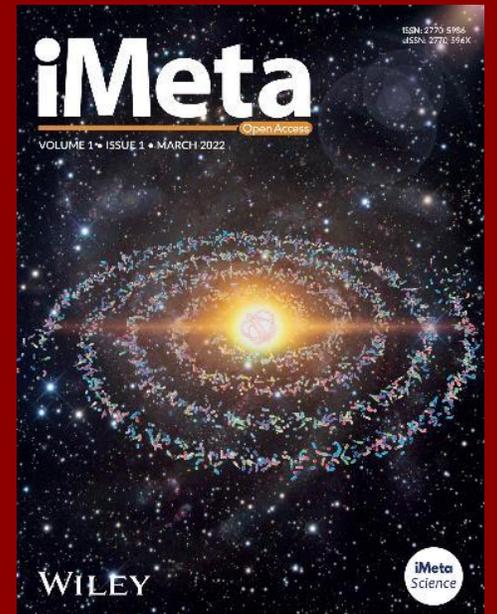
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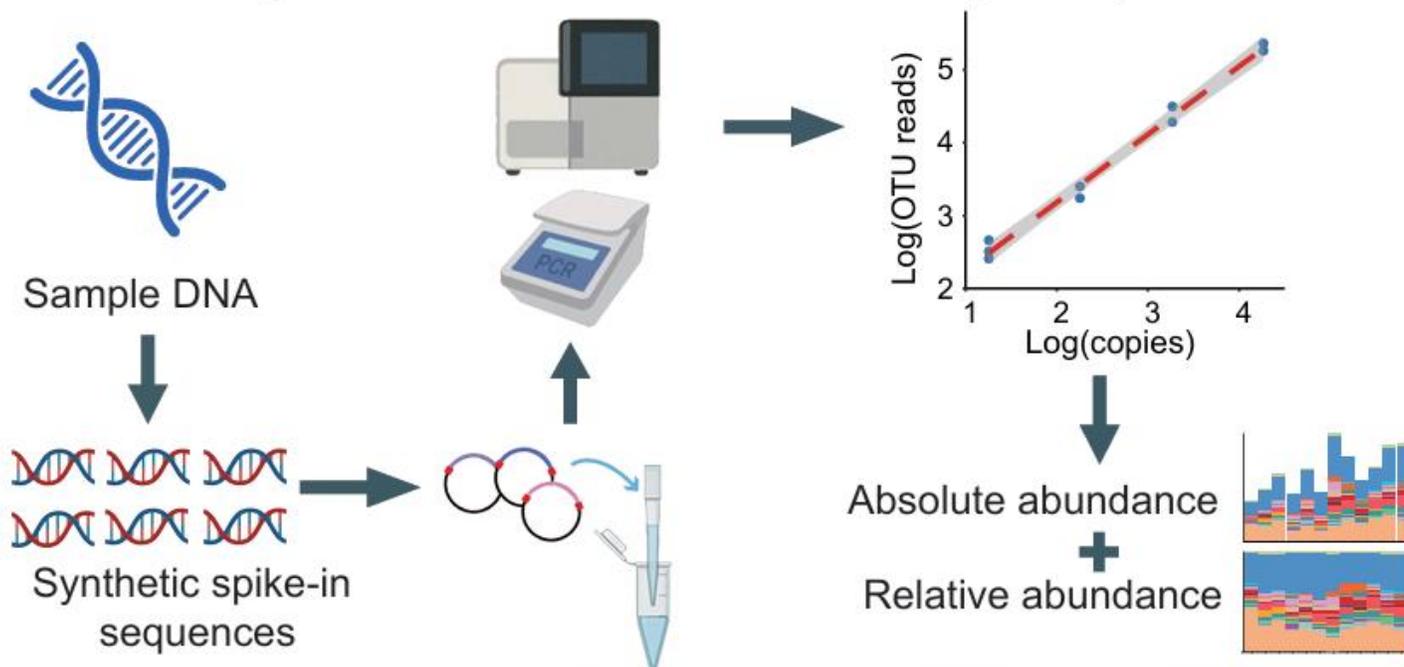
<https://doi.org/10.1002/imt2.70116>



Introduction

Accu16S/AccuITS

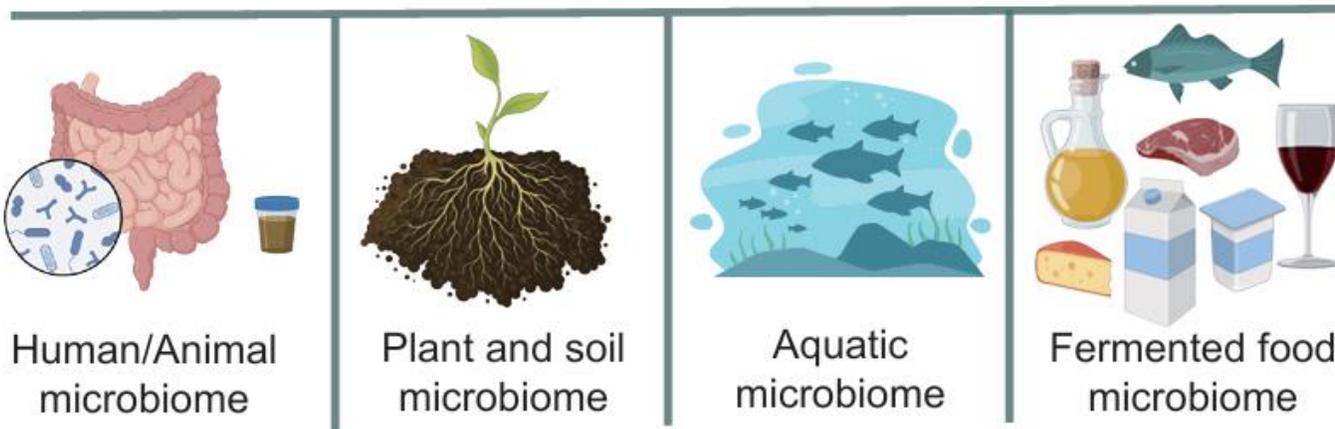
Absolute quantification of bacterial and fungal amplicons



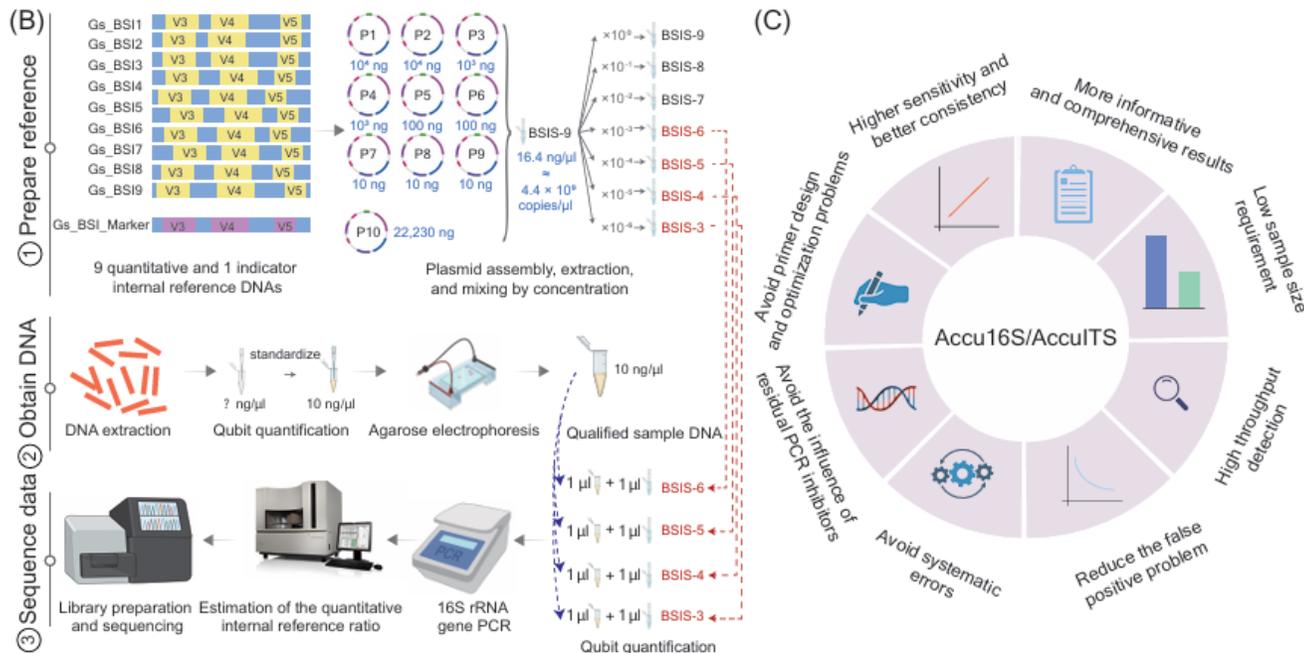
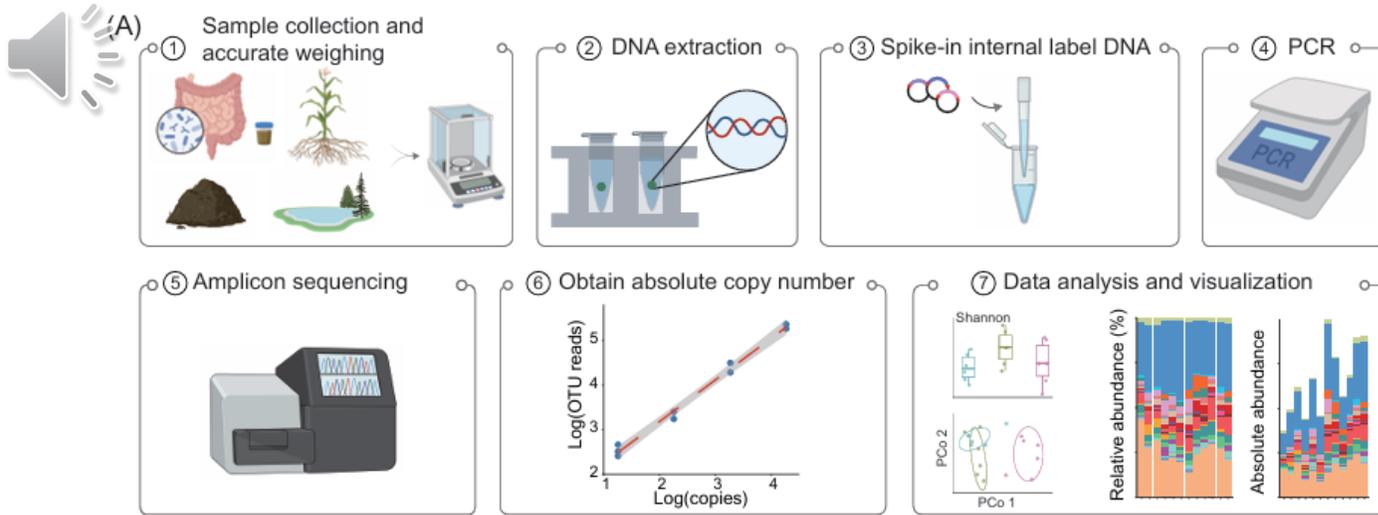
1. Traditional 16S rRNA and ITS sequencing only provide relative abundance, which can easily lead to bias.

2. Accu16S/AccuITS achieves absolute quantification using internal standard DNA.

3. Relative and absolute abundance can be obtained with a single sequencing run, providing more ecologically meaningful analysis.



Overview and advantages of the Accu16S/AccuITS method



1. The Accu16S/AccuITS method involves adding spike-in with a known copy number after DNA extraction to co-amplify the microbial DNA and construct a standard curve to achieve absolute quantification.

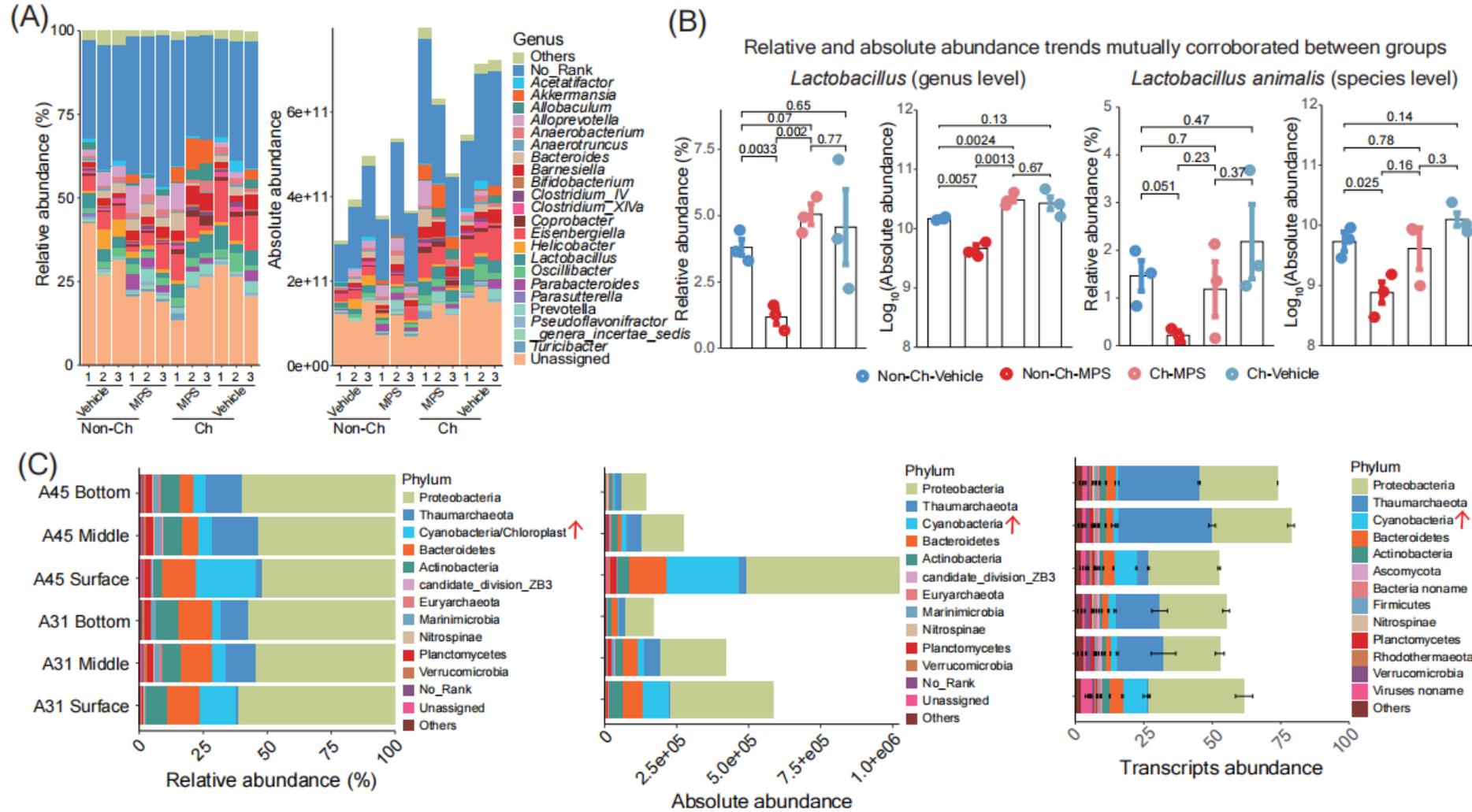
2. The innovation of this method lies in using ABI 3730 capillary electrophoresis to estimate the spike-in ratio through peak area ratio.

3. The main advantages of Accu16S/AccuITS include high accuracy, scalability, and wide applicability.

<https://github.com/YongxinLiu/EasyAmplicon/tree/master/Accu16S ITS>



Wide application of Accu16S/AccuITS

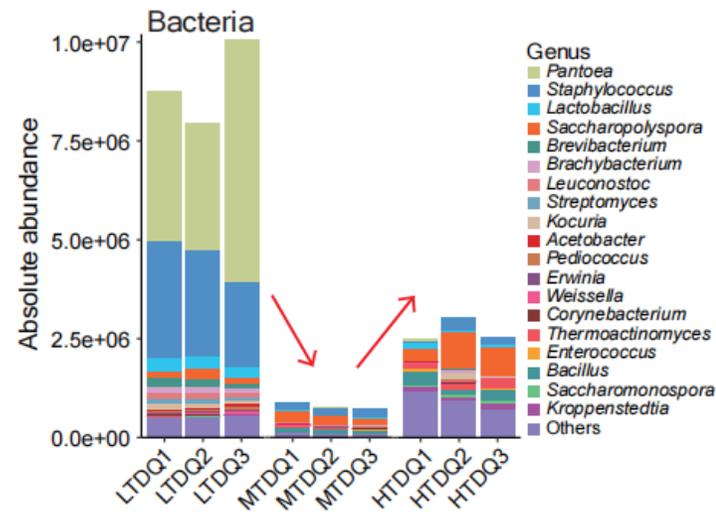
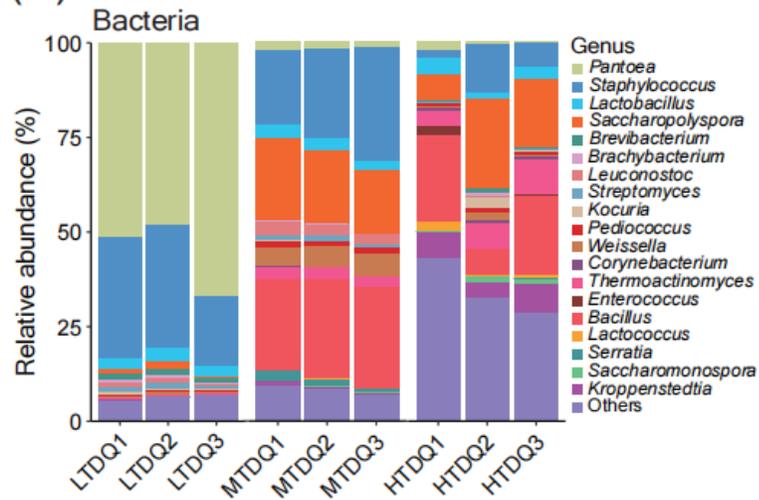


Multiple application cases have demonstrated the wide applicability of the Accu16S/AccuITS method and its positive role in promoting the discovery the role of microorganisms in different ecosystems.

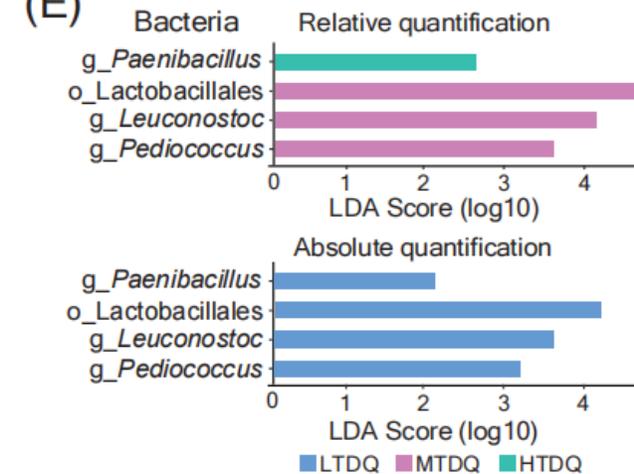
Wide application of Accu16S/AccuITS



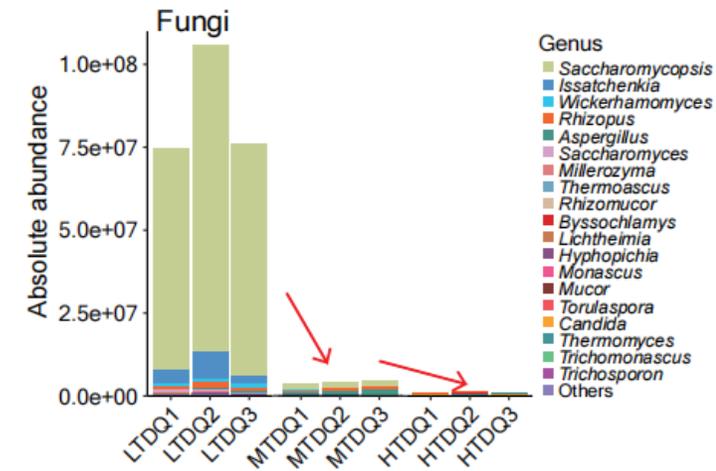
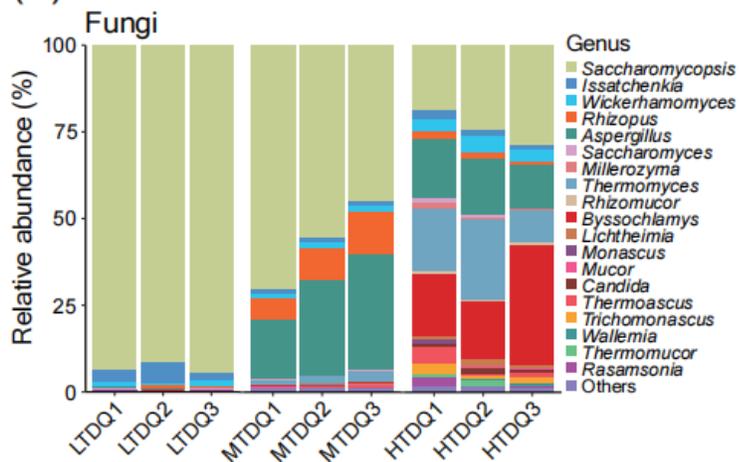
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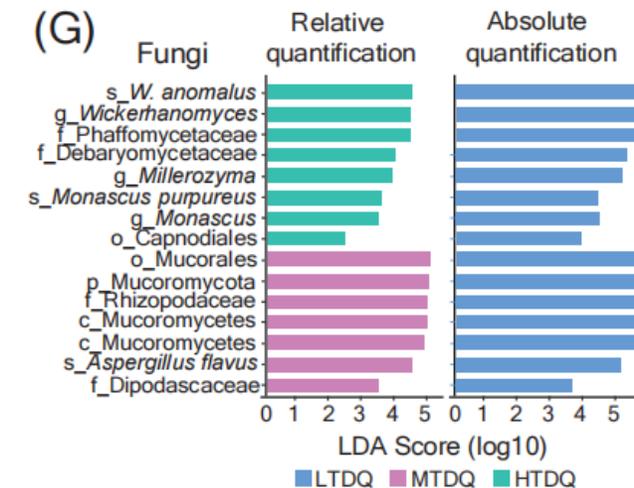
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(F)



(G)



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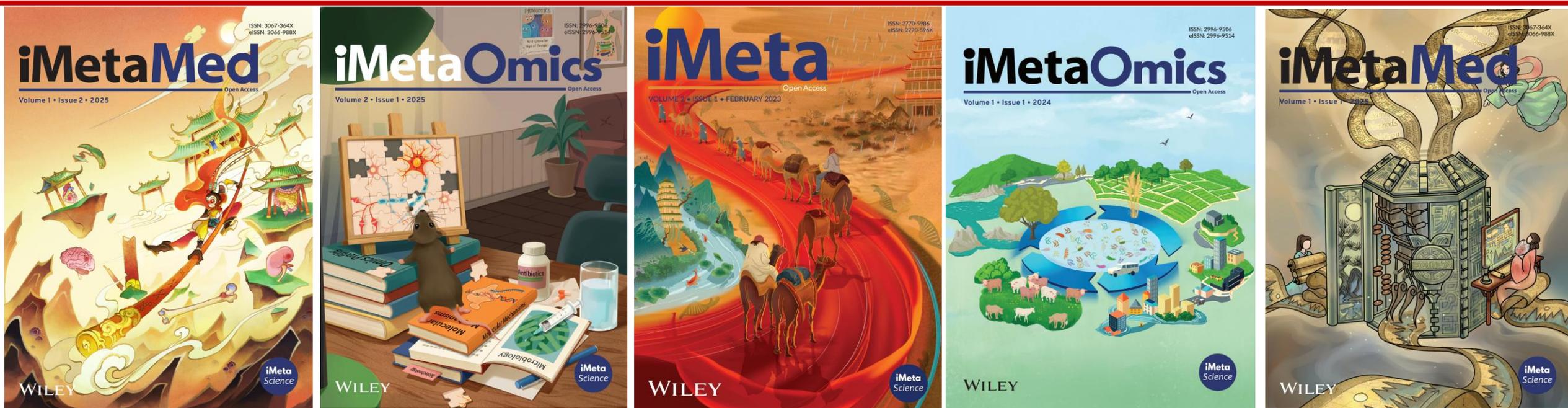
Summary

- ❑ In this study, we introduce an accurate and widely applicable method for absolute quantification of microbiome amplicon assays—Accu16S/AccuITS. ;
- ❑ This method uses ABI 3730 capillary electrophoresis to estimate spike-in ratios from peak areas, enabling simultaneous measurement of relative and absolute abundances in a single run;
- ❑ The main advantages of Accu16S/AccuITS include high accuracy, scalability, and wide applicability;
- ❑ Online website:
https://github.com/YongxinLiu/EasyAmplicon/tree/master/Accu16S_ITS
<http://cloud2.genecowin.com>

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