

The Path to Strong Human Microbiome Data



Understanding human microbiomes is essential to leverage their potential for public health, yet research faces numerous challenges in their interpretation. Data standardisation is crucial to overcome these hurdles. The Human Microbiome Action project determines minimal requirements for data standards and workflows for further development to enhance data quality and reliability.

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OUTCOMES & FINDINGS:

 A comprehensive overview of common microbiome data types generated while studying human microbiomes has been developed.



- Through expert workshops we've identified:
 - A need for modelling a healthy microbiome including progress on the standardisation of what a "healthy" microbiome requires.
 - A framework for choosing model organisms and communities is essential for navigating the microbial landscape.
 - Minimal considerations for multi-omics integration:
 - Data should not be subjected to inherent bias.
 - Selection of an appropriate "ome" for power calculation to differentiate between taxonomic and functional levels.

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REAL WORLD IMPACT & BENEFITS:

By further enhancing microbiome research through the development of strong standards of human microbiome data we are striving for:

Enhanced Reproducibility & Validity:

Standardisation enables increased reproducibility, ensuring more reliable <u>scientific discov</u>eries.

Acceleration of Translational Research:

Streamlined processes speed up the translation of research findings into practical applications.

Standard Operating Procedures (SOPs), Recommendations, and Guidelines:

Development of robust protocols for human microbiome data studies.

Improved Data Sharing:

Standardised data formats boost data sharing and facilitate collaboration within the scientific community.

Integration of Scientific Community:

Breaking silos and fostering knowledge exchange.

CONCLUSION

The Human Microbiome Action project underscores the essential role of standardisation in enhancing the quality and reliability of microbiome research. Through combined efforts in developing standards, the project lays the groundwork for more accurate, reproducible, and impactful scientific discoveries to improve public health for all.

Eager to play a pivotal role in shaping the future of microbiome research? Join our Stakeholder Advisory Board to provide strategic advice from an external point of view or engage with the European Microbiome Centres Consortium to foster interdisciplinary collaboration. please visit our website humanmicrobiomeaction.eu. Follow the @SciFoodHealth <u>Twitter/X</u> and <u>LinkedIn</u> accounts or connect through the <u>Sustainable Food Systems</u> Network Microbiome Subgroup

For further information,

Visit our *zenodo.org* community for all published and upcoming scientific publications.

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