

Jan 05, 2021

# Protocols for "Linking gut microbiome to bone mineral density: a shotgun metagenomic study of 361 eldly women"

Forked from Protocols for "Shotgun Metagenomics of 361 elderly women reveals gut microbiome change in bone mass loss"

Qi Wang<sup>1,2</sup>, Qiang Sun<sup>1,3</sup>, Xiaoping Li<sup>1</sup>, Zhefeng Wang<sup>4</sup>, Haotian Zheng<sup>1,2</sup>, Yanmei Ju<sup>1,2</sup>, Ruijin Guo<sup>1,5</sup>, Songlin Peng<sup>4</sup>, Huijue Jia<sup>1,6</sup>

<sup>1</sup>BGI-Shenzhen, Shenzhen 518083, China;

<sup>2</sup>School of Future Technology, University of Chinese Academy of Sciences, Beijing, 101408, China.;

<sup>3</sup>Department of Statistical Sciences, University of Toronto, Toronto, Canada;

<sup>4</sup>Department of Spine Surgery, Shenzhen People's Hospital, Ji Nan University Second College of Medicine, 518020, Shenzhen, China.;

<sup>5</sup>Macau University of Science and Technology, Taipa, Macau 999078, China;

<sup>6</sup>Shenzhen Key Laboratory of Human Commensal Microorganisms and Health Research, BGI-Shenzhen, Shenzhen 518083, China

1 Works for me [dx.doi.org/10.17504/protocols.io.bq6imzce](https://dx.doi.org/10.17504/protocols.io.bq6imzce)

BGI GIGA 1 more workspace

wangqi

## ABSTRACT

Bone mass loss contributes to the risk of bone fracture in the elderly. Many factors including age, obesity, estrogen and diet, are associated with bone mass loss. Mice studies suggested that the gut microbiome might affect the bone mass by regulating the immune system, however there has been little evidence from human studies. Bone loss increases after menopause. Therefore, we have recruited 361 Chinese post-menopausal women to collect their fecal samples and metadata to conduct metagenome-wide association study (MWAS) to investigate the influence of the gut microbiome on bone health. Gut microbiome sequencing data were produced using BGISEQ500 sequencing, Bone mineral density (BMD) was calculated using Hologic dual energy X-ray machine, body mass index (BMI) and age were also recorded. This collected data allows exploration of the gut microbial diversity and their links to bone mass loss, as well as microbial markers for bone mineral density. In addition, these data are potentially useful in studying the role the gut microbiota might play in bone mass loss and in exploring the bone mass loss process.

## DOI

[dx.doi.org/10.17504/protocols.io.bq6imzce](https://dx.doi.org/10.17504/protocols.io.bq6imzce)

## COLLECTION CITATION

Qi Wang, Qiang Sun, Xiaoping Li, Zhefeng Wang, Haotian Zheng, Yanmei Ju, Ruijin Guo, Songlin Peng, Huijue Jia 2021. Protocols for "Linking gut microbiome to bone mineral density: a shotgun metagenomic study of 361 eldly women". **protocols.io**  
<https://dx.doi.org/10.17504/protocols.io.bq6imzce>

## FORK NOTE

## FORK FROM

Forked from Protocols for "Shotgun Metagenomics of 361 elderly women reveals gut microbiome change in bone mass loss", wangqi

#### LICENSE

———— This is an open access collection distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

#### CREATED

Jan 05, 2021

#### LAST MODIFIED

Jan 05, 2021

#### OWNERSHIP HISTORY

Jan 05, 2021  Hongling Zhou

Jan 05, 2021  wangqi



#### COLLECTION INTEGER ID



45994



#### ABSTRACT



Bone mass loss contributes to the risk of bone fracture in the elderly. Many factors including age, obesity, estrogen and diet, are associated with bone mass loss. Mice studies suggested that the gut microbiome might affect the bone mass by regulating the immune system, however there has been little evidence from human studies. Bone loss increases after menopause. Therefore, we have recruited 361 Chinese post-menopausal women to collect their fecal samples and metadata to conduct metagenome-wide association study (MWAS) to investigate the influence of the gut microbiome on bone health. Gut microbiome sequencing data were produced using BGISEQ500 sequencing, Bone mineral density (BMD) was calculated using Hologic dual energy X-ray machine, body mass index (BMI) and age were also recorded. This collected data allows exploration of the gut microbial diversity and their links to bone mass loss, as well as microbial markers for bone mineral density. In addition, these data are potentially useful in studying the role the gut microbiota might play in bone mass loss and in exploring the bone mass loss process.



## FILES

- 

**BGISEQ-500 Sequencing**  
**Version 1**  
by Xinming Liang, Beijing Genomics Institute
- 

**Quality control for metagenomics data**  
**Version 1**  
by Qi Wang
- 

**DNA extraction for human microbe samples.**  
**Version 1**  
by Lilan Hao
- 

**BGISEQ-500 WGS library construction**  
**Version 1**  
by Xinming Liang, Beijing Genomics Institute
- 

**The calculation of gut metabolic modules from gene profile**  
**Version 1**  
by wangqi