MAY 11, 2018

🌐 BGISEQ-500 Sequencing

📁 GigaScience

📁 In 6 collections

Jie Huang¹, Xinming Liang², Yuankai Xuan³, Chunyu Geng², Yuxiang Li², Haorong Lu², Shoufang Qu¹, Xianglin Mei³, Hongbo Chen¹, Ting Yu¹, Nan Sun¹, Junhua Rao², Jiahao Wang⁴, Wenwei Zhang², Ying Chen², Sha Liao², Hui Jiang², Xin Liu², Zhaopeng Yang¹, Feng Mu², Shangxian Gao¹

¹National Institutes for Food and Drug Control (NIFDC); ²BGI-Shenzhen;

³State Food and Drug Administration; ⁴BGI-Qingdao

OPEN ACCESS

DOI:

dx.doi.org/10.17504/protocols.io.pq7dmzn

External link:

<https://doi.org/10.1093/gigascience/giy144>

Protocol Citation: Jie Huang, Xinming Liang, Yuankai Xuan, Chunyu Geng, Yuxiang Li, Haorong Lu, Shoufang Qu, Xianglin Mei, Hongbo Chen, Ting Yu, Nan Sun, Junhua Rao, Jiahao Wang, Wenwei Zhang, Ying Chen, Sha Liao, Hui Jiang, Xin Liu, Zhaopeng Yang, Feng Mu, Shangxian Gao 2018. BGISEQ-500 Sequencing.

protocols.io

<https://dx.doi.org/10.17504/protocols.io.pq7dmzn>

MANUSCRIPT CITATION:

A reference human genome dataset of the BGISEQ-500 sequencer

Jie HuangXinminggLiangYuankaiXuanChunyu

GigaScience Press

BGI

Xinming Liang

Beijing Genomics Institute

ABSTRACT

BGISEQ-500 is a new desktop sequencer developed by BGI. Using DNA nanoball and combinational probe anchor synthesis developed from Complete Genomics™ sequencing technologies, it generates short reads at a large scale.

[XuanShanYu](#)
[GengYuxiang](#)
[LiHaorong](#)
[LuShoufang](#)
[QuXianglin](#)
[MeiHongbo](#)
[ChenTing](#)
[Yu...](#) [Show more](#)

***GigaScience*,**
Volume 6,
Issue 5, 1
May 2017,
Pages 1-
9,<https://doi.org/10.1093/gigascience/gix024>

License: This is an open access protocol 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

Protocol status: Working
We use this protocol and it's working

Created: Apr 25, 2018

Last Modified: Oct 29, 2020

- 1 Test the quality of the sequencing library (see protocol for library preparation) by the Qubit® ssDNA Assay Kit and homogenized at 6ng total amounts.
- 2 Carry out Rolling circle amplification (RCA) for 10 minutes in an 80 ul reaction volume with pure water, buffer and DNB polymerase

- 3 Add 20 ul DNBs stopping buffer to stop the RCA reaction
- 4 Check the quality of the DNBs using the Qubit® ssDNA Assay Kit , concentration should be above 10 ng/μL

- 5 Add 33ul DNBs loading buffer to the DNBs product from the last step, and place it in the BGIDL-50 (the DNBs loading machine)
- 6 install the sequencing chip and selected the DNBs loading process (Version: sample load 2.0) to load the DNBs.

- 7 after loading, take the sequencing chip out and install in the BGISEQ-500 sequencing machine
- 8 load the reagent sequencing kit and open the sequence control software (Version 1.1.0.10003), and select the sequence process Version 1.0.06 and Zebacall process Version 0.5.0.13875 for sequencing.
- 9 Sequencing is initiated after the sequencing reagents preloaded and sequencing chip was installed, and this process is finished in about 72 hours. When the whole sequencing was finished, the binary file with bases and quality score were converted into FASTQ format with Phred+33 quality score.