

Product feedback from users

Product Name : KAPA Library Amplification Kits (KK2612)
(Kapa HiFi DNA polymerase)
Manufacturer : KAPA BIOSYSTEMS
Application : Reduction of amplification bias in next generation sequencing library prepared from GC rich streptomyces genomic DNA (70%GC)

This application data were kindly provided by Mr. Yu Shiwa at NODAI Genome Research Center, Tokyo University of Agriculture, Japan.

Comparison method

We prepared libraries based on the following conditions and made three types of sample : 1) PCR-Free (amplification-free), 2) amplified through 12 cycles with an amplification enzyme from manufacturer I, and 3) amplified through 12 cycles with KAPA LA Kit (Kapa HiFi DNA polymerase). Then we sequenced the samples on Illumina GAIIx.

We conducted a mapping for the three samples with read number of 3 million each and created scatter plots for average depth of sequence coverage and GC-content (Please refer to the following plots).

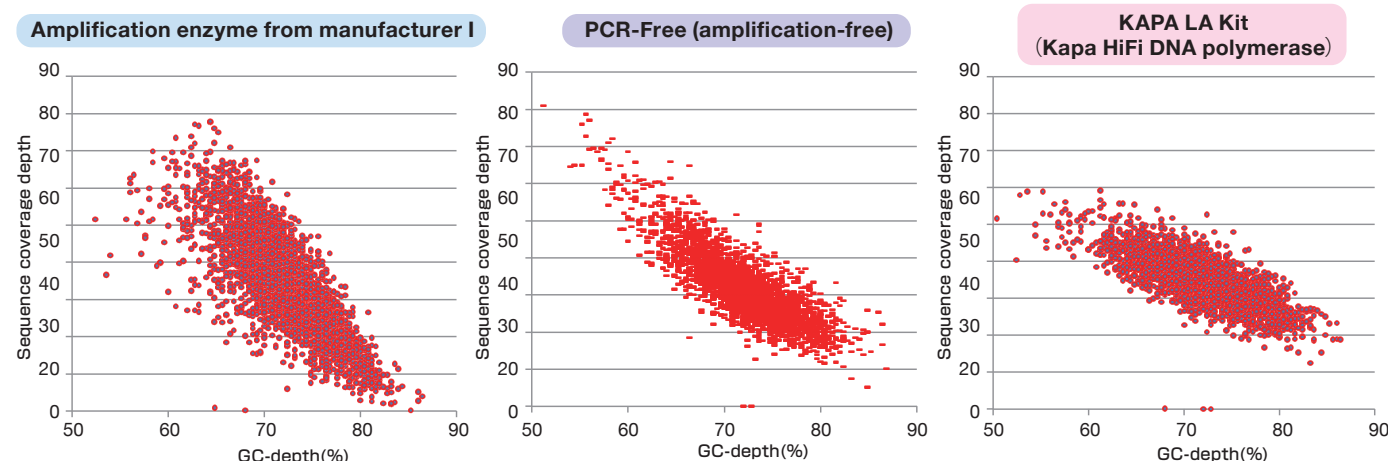
In addition, we compared the results of *de novo* assembly (Please refer to the following chart).

First sample : *Streptomyces griseus* wild-type strain genomic DNA 5μg
Method of genomic DNA fragmentation : Covaris S2 (M&S Instruments Inc.) with standard setting of 300 bp
Library preparation : BECKMAN COULTER SPRIworks Fragment Library System
Next generation sequencer : Illumina GAIIx

*We used BWA for mapping and Velvet for *de novo* assembly.

Result

Streptomyces (GC70%)



	Result of <i>de novo</i> assembly			
	Contig number	N50 (bp)	Longest contig (bp)	Total contig base length (bp)
Amplification enzyme from manufacturer I	3,746	4,611	47,272	8,338,275
PCR-Free	763	114,387	483,997	8,429,864
KAPA LA Kit (Kapa HiFi DNA polymerase)	530	244,920	429,800	8,420,981

<User's comment>

Library amplification by using the KAPA LA kit resulted in enough coverage even in high GC-content areas like amplification-free control, and the result of *de novo* assembly was also good. I think library amplification using KAPA kit is very helpful for GC & AT-rich samples of which DNA amount is limited.