Whole Genome Amplification Kit – *DIRECT*

WGA Kit for several sources like: Whole blood, animal tissues, plant leaves and seeds, clinical & forensic sample

Applications:
• Genotype analysis
• PCR and real-time PCR
• Construction of genomic library

Highlights:
• Fast and uniform amplification across entire genome

• Multiple Displacement Amplification by *Phi29* DNA polymerase

• Direct WGA from whole blood, animal tissues, plant leaves and seeds, clinical & forensic sample [Saliva, Buccal swab, Hair root, Blood stain (toilet paper or paper)]

Description:
The Whole Genomic Amplification Kit is a complete system from various tissues or samples directly without DNA purification processes.

Very little number of samples, several milligram or microliter volume, are required for the direct WGA.

About 10 µg DNA products could be obtained in a standard reaction. The enzyme mix and buffer systems are designed to tolerate against most amplification inhibitors found in crude samples.

Phi29 DNA polymerase isothermally amplifies the genomic DNAs included in the samples with multiple displacement mechanism.

Phi29 DNA polymerase could produce DNA strand up to 70 kb long with high fidelity.

All required components including enzymes, buffers, dNTPs, random primers, and sample pre-treatment reagents are supplied in this kit.

Content:

Component	WGA-S	WGA-L
1 M DTT	100 µl	500 µl
PBS Buffer	20 µl	100 µl
DB	1.0 ml	5 x 1.0 ml *** precaution
NB	40 µl	200 µl
Primer Mix	20 µl	100 µl
Enzyme Mix	20 µl	100 µl
Reaction Buffer	240 µl	1.2 ml
dNTP Mix (each 10 mM)	40 µl	200 µl

Shipping: shipped on blue ice

Storage Conditions: store at -20 °C

Shelf Life: 16 months

Protocol:

1. Preparation of DM Buffer
• for one reaction mix 50 µl DB with 5 µl 1 M DTT (for *blood samples* mix 5 µl DB with 0.5 µl 1 M DTT)
• **Please note**: DM Buffer should be freshly prepared precaution for use

2. Sample Preparation

for Blood Samples

• Add 1 µl of PBS Buffer to 0.5-1 µl of whole blood sample.
• Add 1.5 µl of DM Buffer and mix by pipetting.
• Incubate on ice for 10 min.
• Add 1.5 µl of NB. Briefly vortex and spin down.

for Animal tissue

• Transfer 50 µl of DM Buffer into a 1.5 ml microtube.
• Add a tissue slice size of about 5 mm into the DM buffer. Briefly mix by vortexing and spin down.
• Incubate at room temperature for 10 min.
• Transfer 2 µl of the supernatant into a new 1.5 ml microtube.
• Add 2 µl of NB. Mix by pipetting and spin down.

for Plant Leaves or Seeds

• Transfer 50 µl of DM Buffer into a 1.5 ml microtube.
• Add a plant leaf cut size of about 5 mm or several small (<1 mm size) pieces of cracked plant seeds into the DM buffer. Briefly mix by vortexing and spin down.
• Incubate at room temperature for 10 min.
• Transfer 2 µl of the supernatant into a new 1.5 ml microtube.
• Add 2 µl of NB. Mix by pipetting and spin down.

3. Preparation of the mix

Component	**20 µl Assay**
Reaction Buffer	12 µl
dNTP Mix (10 µM)	2 µl
Primer Mix	1 µl
Enzyme Mix	1 µl
PCR-grade water	fill up to 20 µl

4. Incubation

• Incubate at 30 °C for 1.5 hours and inactivate the enzyme at 65 °C for 3 min.

Please note: Perform the reaction at a thermal cycler or incubator. Water-bath is not recommendable. For PCR, use 1-2 µl of 10-fold diluted product with distilled water. If the PCR is not successful, it is recommended to use 1-2 µl of undiluted product as PCR template.

5. Storage

• Store amplified DNA at -20 °C.

***** Component DB contains dangerous substance**

Signal word: Danger
Hazard statements

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H412 Harmful to aquatic life with long lasting effects.
Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../ if you feel unwell.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Ordering Information

Cat.-no	**Description**	**Amount**
WGL-S	Whole Genome Amplification Kit	20 rcs x 20µl
WGL-L	Whole Genome Amplification Kit	100 rcs x 20µl