VITANAVITECH

Product information

Product Name: 2X ZipTaq & ZipTaq LA Mix

Catalog No: VN3000M, VN3001M, VN3010M, VN3011M

Packing Size: 500 x 25 µl rxns and 250 x 25 µl rxns

Shipping Condition: Ice pack

Storage Condition: -20^{0}C

Product Description:

ZipTaq or **ZipTaq LA Mix** is a ready-to-use 2X mixture of ZipTaq or ZipTaq LA DNA polymerase, salts, magnesium and dNTPs for setting up a trouble-free PCR reaction. All you have to do is to add template, specific primers and water, thereby save time, effort and minimize pipetting error.

2X ZipTaq or **ZipTaq LA Mix** is recommended for all standard PCR applications, especially for fast PCR cycling condition. The mix is comprised of **ZipTaq** or **ZipTaq LA** DNA polymerase (for amplification of a longer fragment) and a novel buffer system that enable fast PCR and deliver very high yield PCR amplification over a wide range of PCR templates. It has been developed to give more robust and fast amplification than other commonly-used mixes.

Protocol:

PCR setting for a 25 µl reaction

Reagent	**Volume**	**Final Concentration**
2X ZipTaq / ZipTaq LA PCR Mix	12.5 µl	1x
Left Primer	Variable	0.4 µM
Right Primer	Variable	0.4 µM
DNA Template[†]	Variable	0.1-100 ng
De-ionized Distilled H_2O	Adjust final volume to 25 µl	-

[†]DNA amount depends mostly on genome size and target gene copy number.

Typical Cycling Parameters

Three-step PCR

Initial denaturation	95^{0}C	1-2 min
25-40 cycles		
Denaturation	94^{0}C	1 to 5 sec
Annealing	50^{0}C to 68^{0}C (depending on Tm of primers)	1 to 5 sec*
Extension	68-72^{0}C	1-5 sec / 1kb target*
Final Extension	68-70^{0}C	1-5 min
Hold	4^{0}C	

Two-step PCR

Initial denaturation	95^{0}C	1-2 min
25-40 cycles		
Denaturation	94^{0}C	1 to 5 sec*
Annealing/Extension	60^{0}C to 68^{0}C (depending on Tm of primers)	1 to 5 sec / 1kb target*
Final Extension	60-68^{0}C	1-5 min
Hold	4^{0}C	

*Exact number of seconds will depend on the thermocycler and target. We recommend experimentation to determine precise cycling parameters.

Troubleshooting guide

Problem	Solution
No PCR products	Please check your PCR settings to ensure that all necessary components are included in the PCR mix. It's also recommended to perform a gradient annealing temperature experiment to determine the optimal temperature for your specific target. This can help to improve PCR efficiency and specificity, resulting in more reliable and consistent results.
The bands in agarose gel are smear	It's important to check for DNA and primer degradation as degraded DNA or primers can also negatively impact the PCR results.
Low yield of products	You can try the following strategies to improve PCR performance: • Conduct an enzyme titration experiment to optimize the enzyme concentration for your specific target. • Increase the extension time to ensure complete amplification of the target DNA. • Try a gradient annealing temperature experiment to identify the optimal annealing temperature for your primers. • Consider redesigning your primers if the amplification is not specific or efficient enough.
Non-specific products are observed	If you are observing non-specific products in your PCR reaction, there are several strategies you can try: • Perform a gradient annealing temperature experiment to identify the optimal temperature for your primers, which can help to reduce non-specific products. • Check the GC content of your target sequence. If it's above 65%, it may be necessary to use our PEC-GC or other PCR enhancers. • Evaluate your primers and redesign them if necessary to improve specificity and reduce non-specific products.

Note: This product is for R&D use only

VitaNavi Technology LLC. 613 Big Bend Rd, Unit 941, Ballwin MO 63021. Toll free (US and Canada): (800) 586-6927; Phone: (314) 499-8280. Fax: (866) 302-5897. Email: support@vitanavitech.com. Website: https://www.vitanavitech.com.