Rev.0

EmeraldNStart HiFi Marathon PCR Master Mix (ESPCRMM)

Catalog #MB6038-1, 1 mL, for 40 reactions
or
Catalog #MB6038-5, 5 mL, for 200 reactions
or
Catalog #MB6038-30, 30 mL, for 1200 reactions

Introduction

ScienCell's EmeraldNStart HiFi Marathon PCR Master Mix (ESPCRMM) is a 2X PCR master mix with a "hot-start" property. ESPCRMM is ideal for use in routine lab PCR reaction, and also for complex template or long-range PCR. The 2X master mix contains, dNTPs, ScienCell's engineered DNA polymerase, inert green-color loading indicator and optimized buffer system. The error rate of ScienCell's engineered DNA polymerase is over 25-fold lower than that of Taq polymerase. The "hot-start" property achieved through ScienCell's unique chemically modified DNA polymerase provides maximal inhibition of primer dimer formation. The advanced buffer formulation provides superior specificity and efficiency to various templates (up to 20 kb for simple templates, and 10 kb for complex templates). The green inert loading indicator, a mixture of Orange G and Xylene Cyanol FF, allows for better visualization and tracking of sample loading in PCR tubes and directly to agarose gel. On a 1% agarose gel in 1x TAE, the loading indicator Xylene Cyanol (blue color) migrates at approximately 4 kb and Orange G (yellow color) migrates at approximately 50 bp.

Kit Components

Catalog #MB6038-1

Cat #	Item	Quantity	Storage
MB6038-1	EmeraldNStart HiFi Marathon PCR Master Mix	1 mL	-20°C

Catalog #MB6038-5

Cat #	Item	Quantity	Storage
MB6038-1	EmeraldNStart HiFi Marathon PCR Master Mix	1 mL x 5	-20°C

Catalog #MB6038-30

Cat #	Item	Quantity	Storage
MB6038-10	EmeraldNStart HiFi Marathon PCR Master Mix	10 mL x 3	-20°C

Quality Control

The performance of ESPCRMM is verified to amplify 12 kbp plasmid DNA and 8 kbp human genomic DNA with appropriate primers. DNase activity was NOT detected by incubating each component of ESPCRMM with single-stranded and double-stranded DNA at 37°C for 24 hours.

Product Use

ESPCRMM is for research use only. It is not approved for human or animal use, or for application in clinical or in vitro diagnostic procedures.

Shipping and Storage

The product is shipped on dry ice. Upon receipt, store EmeraldNStart HiFi Marathon PCR Master Mix (Cat #MB6038) at -20°C in a manual defrost freezer. Aliquot as needed. Avoid repeated freeze-and-thaw cycles.

Procedure

***Important: Only** use nuclease-free reagents in PCR amplification.*

1. Thaw EmeraldNStart HiFi Marathon PCR Master Mix and place on ice.

2. Prepare 20 µL PCR reactions in PCR tubes or plates as shown in Table 1. For other reaction volume setup, scale up or down proportionally.

Table 1. Preparation of 20 µL qPCR reactions

Component	Volume	Final concentration
EmeraldNStart HiFi Marathon PCR Master Mix	10 µL	1X
Template DNA	variable	-
Nuclease-free water	variable	-
Forward and reverse primers	variable	250 – 500 nM
Total volume per reaction	20 µL	-

3. Refer to Table 2 for a typical 3-step PCR program setup or Table 3 for a typical 2-step PCR program setup. Adjust properly according to the optimized PCR conditions for the reactions to run. Load the PCR tubes or plates into the PCR instrument and run the program.

Table 2. A typical 3-step PCR program setup

Step	Temperature	Time	Cycles
DNA polymerase activation	95°C	10 min	1
Denaturation	95°C	20 sec	30-45
Annealing	50 - 72°C	20 sec	
Extension	72°C	2 kb/min	
Optional	72°C	5-10 min	1
Hold	20°C	Indefinite	1

Table 3. A typical 2-step PCR program setup

Step	Temperature	Time	Cycles
DNA polymerase activation	95°C	10 min	1
Denaturation	95°C	30 sec	30-45
Annealing	68°C	1.5 kb/min	
Optional	72°C	5-10 min	1
Hold	20°C	Indefinite	1

4. Load PCR product directly to an agarose gel or store at 4°C until needed.