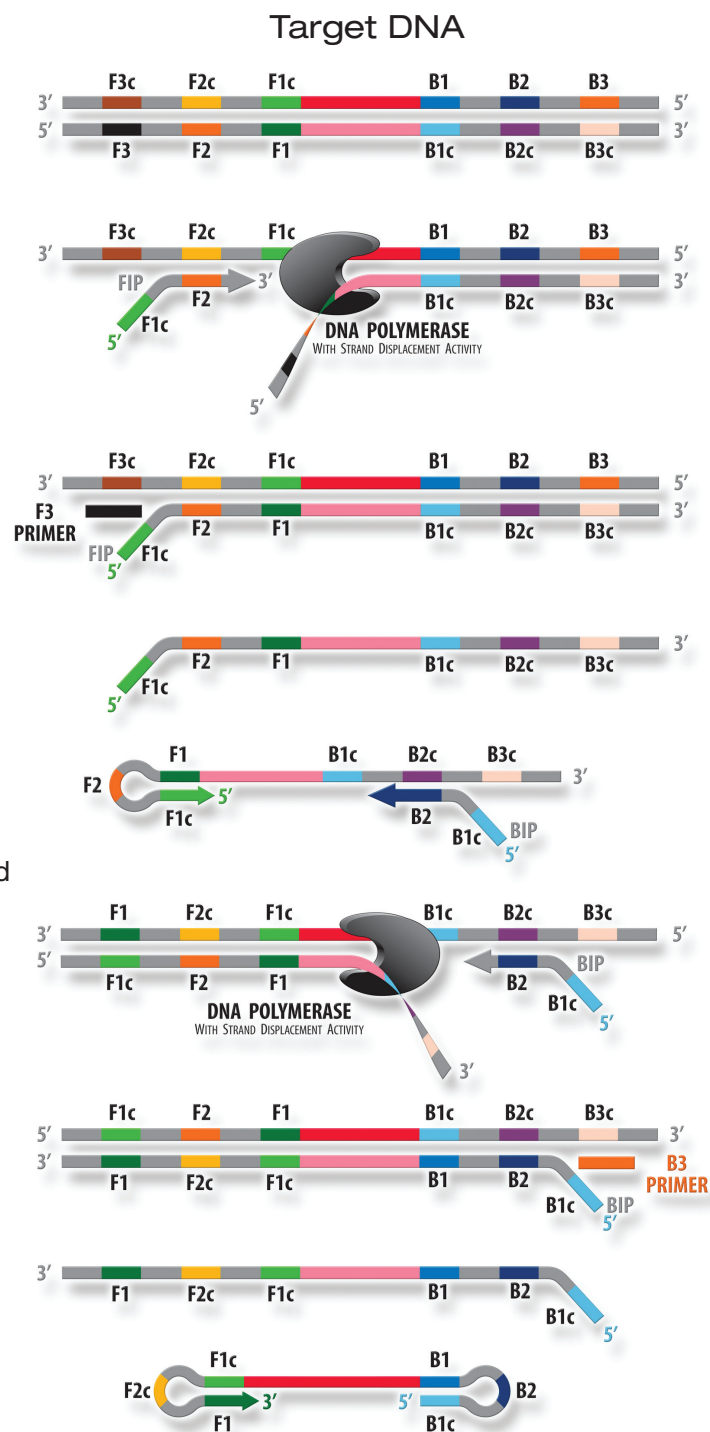


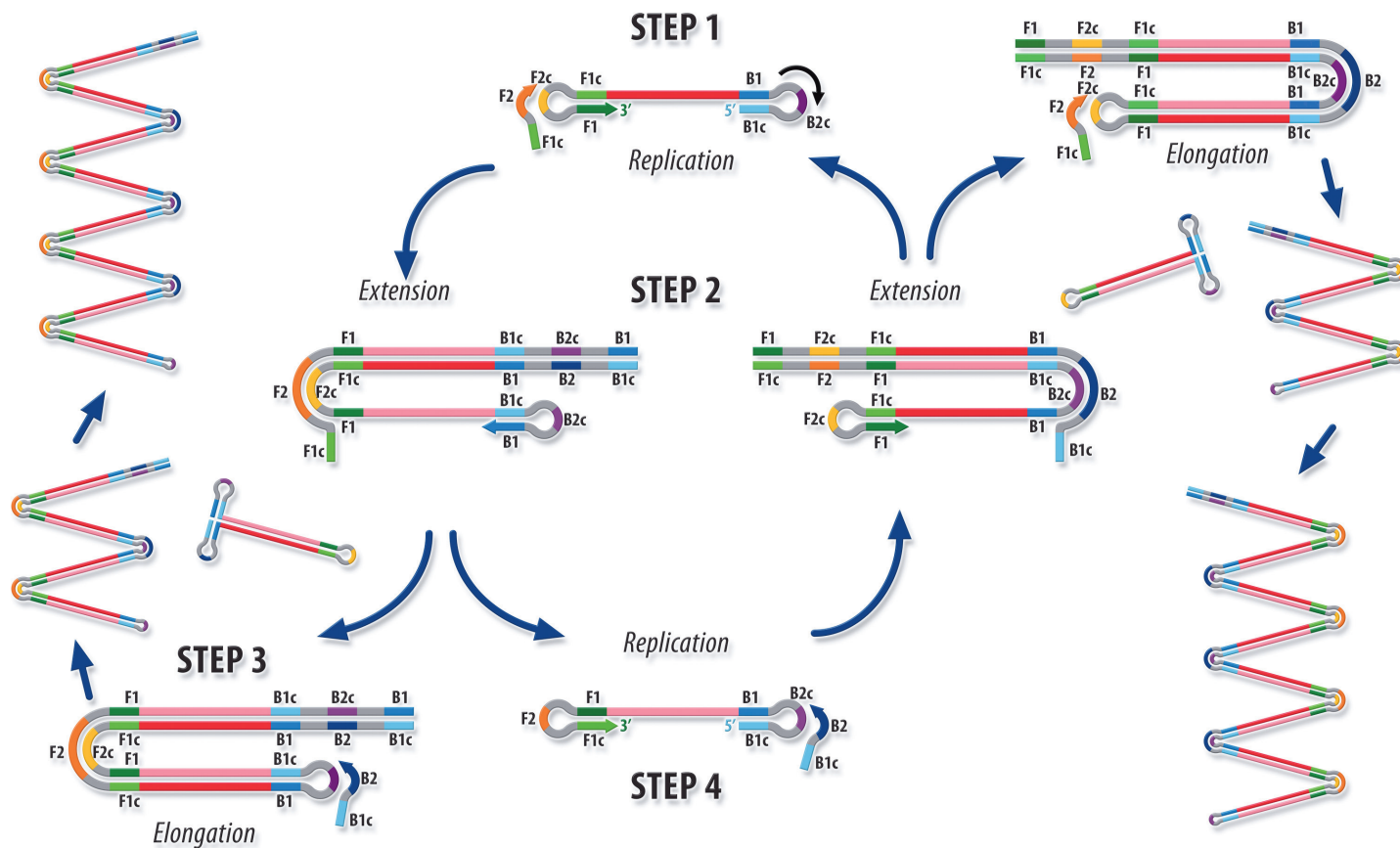
# LAMP Process

1. Solution temperature at 60°–65° C
2. Forward Initiating Primer (FIP) anneals to Target Sequence
3. DNA Polymerase initiates synthesis that displaces single strand template DNA
4. Through polymerase activity, a strand complementary to the DNA template is formed
5. The F3 Primer anneals to the F3c Region
6. DNA Polymerase initiates synthesis and the FIP-linked complementary strand is replaced
7. This strand forms a “stem loop” at the 5’ end due to complementary F1 and F1c regions
8. The BIP anneals to the 3’ end of the “stem loop” strand
9. The B3 Primer anneals to the B3c target
10. From the 3’ end, polymerase synthesizes a complementary DNA strand
11. DNA reverts from a Loop structure to a linear structure
12. The BIP linked complementary strand is displaced as a single strand
13. This strand forms stem-loops at either end due to the activity of the dual complementary primers
14. This is the starting structure for LAMP Cycling

(Continued on next page)



## LAMP Process (cont.)



**15. LAMP Cycling.** A dumbbell-like DNA structure is quickly converted into a stem-loop DNA by self-primed DNA synthesis. FIP anneals to the single stranded region in the stem-loop DNA and primes strand displacement DNA synthesis, releasing the previously synthesized strand. This released single strand forms a stem-loop structure at the 3' end because of complementary B1c and B1 regions.

Then, starting from the 3' end of the B1 region, DNA synthesis starts using self-structure as a template, and releases FIP-linked complementary strand (STEP 2).

The released single strand then forms a dumbbell-like structure as both ends have complementary F1–F1c and B1c–B1 regions, respectively (STEP 4).

This structure is the 'turn over' structure of the structure formed in STEP 1. Similar to the STEPS 1 THROUGH 4, structure in STEP 4 leads to self-primed DNA synthesis starting from the 3' end of the B1 region.

Furthermore, BIP anneals to the B2c region and primes strand displacement DNA synthesis, releasing the B1-primed DNA strand. Accordingly, similar structures to STEPS 2 AND 3 as well as the same structure as STEP 1 are produced. With the structure produced in STEP 3, the BIP anneals to the single strand B2c region, and DNA synthesis continues by displacing double stranded DNA sequence. As a result of this process, various sized structures consisting of alternately inverted repeats of the target sequence on the same strand are formed.



For more information, contact an illumigene® specialist at 1-888-763-6769 or visit us on the web at [www.meridianbioscience.com](http://www.meridianbioscience.com).