

Normalized SOP's for (q)PCR applications, how easy can that be?

Many laboratories have SOP (Standard Operation Procedures) in place. Incorporation of new components in SOP's are generally labor and time consuming. In the (q)PCR process, variables as cyclers, plastic disposables, kit components and work procedures are typically described and incorporated in SOP's. Often different SOP's in place for one application are used on several (different) cyclers. BIOplastics and CYCLERtest® have formulated a strategy which enables exclusion of the cycler as well as the used disposable variable. This strategy actually provides users the ability to normalize their SOP.

How does it work??

Since BIOplastics manufactures the widest and most uniform range of (q)PCR disposables which fit any brand or model of (q)PCR cyclers, and since BIOplastics produces its products identical in raw material properties, and uniformity, one can exclude the disposable variation by using BIOplastics disposables. So instead of using a variety of disposables from different vendors, compositions and tube designs, required to fit your cycler range you could opt for one source (BIOplastics) only. Your disposables will then have exactly the same properties for different models of cyclers. By doing so one can exclude differences in disposables. Combine this knowledge with the CYCLERtest® calibration service or the purchase of a Driftcon® system which enables you to "fingerprint" your cycler thereby excluding the cyclers variable.

So how do you normalize your SOP:

- A: categorize your most sensitive (q)PCR protocol
- B: Select your best cyclers which gives you superior results
- C: Select the BIOplastics (q)PCR disposable which fits your best, superior result cycler
- D: Perform the same test to assure that the BIOplastics product is working on your "best cycler"
- E: Calibrate (Driftcon® or MTAS® service) your best cycler and define its temperature fingerprint.
- F: Calibrate (Driftcon® or MTAS® service) all other cyclers and define their temperature fingerprint.
- G: You have now the translation of temperature between all your cyclers
- H: Modify you cycler protocol (temperature) to match your best cycler fingerprint
- I: Purchase the required specific disposable for your other cyclers from BIOplastics assuring the same raw material composition and properties

RESULT:

A UNIFORM SOP WHICH ASSURES IDENTICAL RESULTS REGARDLESS OF THE CYCLER USED

Problems in defining uniform SOP'S? Just let BIOplastics or CYCLERtest® know and we guide you through this CONVENIENT solution!!



Normalized SOP's in practice

Assume Cycler 1 gives you the best results in your most sensitive application. Select a BIOplastics consumable which fits cycler 1 and run your most sensitive application. Your results should be the same or superior. If not optimize until you have the same result temperature fingerprint all cyclers by means of Driftcon® or MTAS®. (15 channel dynamic 2 Hz measurement)

In this example we call the fingerprint of Cycler 1: X

Determine the relationship between the cyclers and normalize the other cyclers (2-5) to cycler 1 by adjustment of the programmed protocol for temperature and time for each plateau:

Example the denaturation temperature was programmed: 95 degrees and actually measured was 94.5 °C= X

so if Cycler 1= X and Cycler 2= X - 0.3°C, Cycler 3= X + 0.6°C, Cycler 4= X - 0.9°C, Cycler 5= X + 0.3°C

then you should adjust and normalize the other cyclers for denaturation temperature as below:

Cycler 2: denature temperature to be programmed: 95.3 °C

Cycler 3: denature temperature to be programmed: 94.4 °C

Cycler 4: denature temperature to be programmed: 95.9 °C

Cycler 5: denature temperature to be programmed: 94.7 °C

Now select any BIOplastics consumable which fit one or all cyclers (1-5)

You have now normalized your SOP and can run your sensitive application on all machine without compromising results!!