Homogenizing tip of the day

Faster isn't always better when it comes to homogenizing.

Always begin homogenizing at a low rpm, and then gradually increase the speed to your target level. Running too fast can cause two things to happen:

A quick increase in speed will push the sample away from the probe and inhibit homogenization.

If you are processing a small volume in sample and running at max speed be careful that you aren't pumping the sample through the probe quicker than it can recover. If the sample is moving through the probe quicker than it can recover, the probe will begin to homogenize pockets of air. These moments of dry homogenizing can damage the probe.

When using Multi-Gen 7XL probes, it is not recommended to run at more than half speed (16,000 RPM). If this is required, please contact a PRO Scientific representative to discuss modification of your equipment.

Review more homogenizing tips online.

Tissue Tearor, Disperser or Homogenizer?

What's the difference and what do you need for your application?

The field of homogenizing encompasses a very broad area and is constantly evolving.

The word homogenize means "to make or render homogeneous" while homogeneous means "having the same composition, structure, or character throughout". Homogenizing is what is called an umbrella word - a word which covers a very large area. When someone says that they are homogenizing, they may mean that they are doing one or more of the following, blending, mixing, disrupting, emulsifying, dispersing, stirring etc. Therefore, when the word homogenizing is used it may mean any one or more of the above-mentioned processes.

The current processes or methods of homogenizing can be broken down into three (3) major categories: mechanical, ultrasonic and pressure.

These are reviewed in detail online.

The key to good homogenizing

When it comes to homogenizing, the key to homogenizing is the generator probe as this is the component that actually comes into contact with your sample.

Whether you are equipping your PRO Homogenizer with one of our PRO Quick Connect Generator Probes or our Multi-Gen 7XL Multi-Sample

Generator Probes to homogenize your tissue samples, you will get consistent results each and every time.

All PRO Generator Probes are precision crafted to ensure efficient and effective homogenization and are manufactured out of 316SS to be chemically compatible with your sample and reagents.

Learn more.

Multi-Sample Homogenizing

Multiple sample homogenizing can be time consuming and can create concerns of cross-contamination. PRO Scientific offers the solution.

Multi-Gen 7XL compared to plastic disposable probes

You may be concerned about cross contamination between samples while homogenizing, but remember…plastic doesn't cut it. Multi-Gen 7XL Stainless Steel Probes are the better alternative to plastic disposable probes or tips.

PRO Scientific Multi-Gen 7XL features several advantages over plastic disposable probes:

Higher sample breakdown yields

Multi-Gen probes provide higher sample breakdown yields over plastic probes. This is true even for the homogenization of difficult samples such as tough tissues. The clearance between the stainless-steel rotor-stator is extremely tight and along with its open-slotted teeth, this leads to higher shear rates. This provides faster overall cutting ability and better performance in less time compared to plastic probes.

Extended usage

Multi-Gen Probes were quality tested and run for 11 hours and showed no signs of wear because of its quality design and superior material. Plastic versions have limited usage, depending on brand, and some will even only allow 1-2 uses. Plastic probes are commonly recommended as single use. In some cases, an overused plastic disposable probe or tough sample can shatter or splinter during homogenizing.

Chemical compatibility

Multi-Gen Probes, manufactured out of 316 Stainless Steel and PTFE, provide a greater reagent compatibility compared to plastic models, which have significant limitations. Cleaning Multi-Gen probes is easier because of this construction, and probes can be continually sterilized by any method, including flaming and autoclaving. Plastic versions can only be cleaned with certain methods, and depending on brand, may be autoclaved 1-2 times no matter the sample.

Avoid making homogenizing a consumable in your lab

Environmentally & budget conscious

Multi-Gen Probes are environmentally and budget friendly compared to continually discarding plastic versions. Avoid making your homogenizing a consumable. Multi-Gen Probes have the ability to be continually used, unlike a plastic probe that will need to be purchased again and again.

Learn more why the Multi-Gen 7XL probes are the better alternative to plastic probes or tips.

Homogenizer Applications

PRO Multi-Gen 7XL, multi-sample homogenizing of tissue samples for RNA extraction.

University of Florida & UF Genetics Institute and Graduate Program

https://proscientific.com/multi-sample-homogenizer-kit/

A Comparative Analysis of Gene Expression Profiles during Skin Regeneration in Mus and Acomys

PLOS ONE, Vol. 10, No. 11. (25 November 2015), e0142931, doi:10.1371/journal.pone.0142931

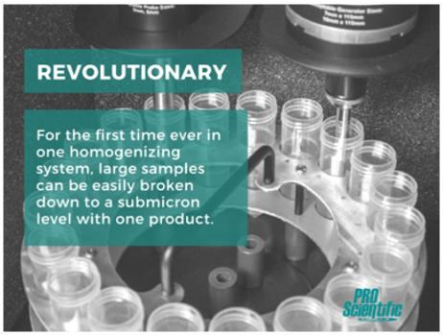
by Jason O. Brant, Maria-Cecilia Lopez, Henry V. Baker, W. Brad Barbazuk, Malcolm Maden

Bio-Gen PRO200 used for RNA extraction of conjunctival epithelial cells.

Shanghai Jiao Tong University, Dept of Ophthalmology

https://proscientific.com/hand-held-homogenizers/bio-gen-pro200-homogenizer/

Yao, Q., Zhang, W., Hu, Y., Chen, J., Shao, C., Fan, X., Fu, Y."Electrospun collagen/poly(L-lactic acid-co-ε-caprolactone) scaffolds for conjunctival tissue engineering". Experimental and Therapeutic Medicine 14, no. 5 (2017): 4141-4147. https://doi.org/10.3892/etm.2017.5073



Homogenizer Reviews

PRO Multi-Gen 7XL

Another fantastic review of the Multi-Gen 7XL Homogenizing package. Courtesy of Tulane University and 3rd party company, SelectScience

Products in Action

Homogenizer Videos

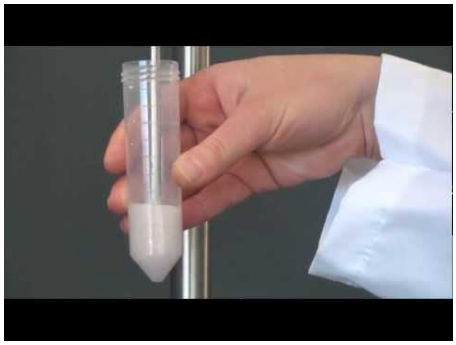
PRO Quick Connect Generator Probe connecting to a PRO Homogenizer motor unit

Click the image above to play YouTube video or visit the following link:
https://www.youtube.com/watch?v=zZQDSz30JxM

PRO QUICK CONNECT design of our generator probes! Easy, durable & work on all PRO homogenizers!

https://proscientific.com/homogenizer-maintenance-page

Multi-Gen 7XL



Tissue sample rapidly homogenized with Multi-Gen 7XL probes. Ideal for multi-sample analysis of even the toughest of tissues!

Click the image above to play YouTube video or visit the following link:
https://www.youtube.com/watch?v=tj49DtIBTCo

https://proscientific.com/multi-sample-homogenizer-kit/premium-multi-gen-7xl-homogenizer-package/

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