

Advertisement feature



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Spinning technologies

The new spin on centrifuges

Many of today's research labs are purifying smaller materials like DNA, RNA, protein and sugars. By purchasing the right tools, such as centrifuges, scientists have the capability to produce better experimental results in labs. Companies such as Thermo Fisher Scientific have developed centrifuges that run faster, are temperature controlled and can usually handle more centrifuge tubes in the rotor. Mentioned here are a few new centrifuges and accessories designed to assist researchers with their purification experiments.

NALGENE Labware offers a line of centrifuge accessories including the **Oak Ridge Centrifuge Tubes** composed of Teflon. The chemical resistant properties of Teflon allow researchers to perform applications involving a strong acid, base or solvent, such as phenol and chloroform extractions. Ideal for high speed centrifugation, NALGENE Oak Ridge Centrifuge tubes are autoclavable and capable of withstanding temperatures ranging from -100°C to $+150^{\circ}\text{C}$.

Thermo Fisher Scientific introduces the **SORVALL Legend RT** and **HIGHplate** rotor to purify plasmid DNA in NUNC deepwell plates. Plasmid purification is an important first step for cloning, protein expression, and sequencing. The ability to perform plasmid purification in 96-well plates makes it possible to perform hundreds of small volume plasmid preps in a day for a much faster, simpler alternative to individual spin columns or traditional phenol-chloroform plasmid purification techniques. The Legend RT with the HIGHplate rotor allows for centrifugation of stacked microplates up to a height of 85 mm, which is typically not accommodated by traditional microplate carriers and can achieve a relative centrifugal force (RCF) of up to $5,084 \times g$ (120 V instrument) or $5,888 \times g$ (230 V instrument). The HIGHplate motor also incorporates a certified biocontainment lid

which provides enhanced user safety. Using this system, researchers can produce quality DNA, with excellent yields and purity.

Thermo Fisher Scientific also announced the new **Heraeus Megafuge 11 Series** of benchtop centrifuges. The Heraeus Megafuge 11 Series is suitable for sample processing in hospitals and high-throughput labs, providing exceptional capacity and performance for many applications such as cell and tissue culture or processing bodily fluid. Available in air-cooled and refrigerated versions, the compact Heraeus Megafuge 11 Series offers a wide selection of rotors and accessories to support a variety of sample preparation needs, making it a versatile and cost-effective choice for clinical separations. It provides outstanding capacity and flexibility, accepting up to 60 Vacutainer tubes, as well as 16 x 50 mL conical tubes, and microplates in sealed containers. Bucket sealing lids provide certified protection and ensure operator safety by keeping hazardous materials securely contained. With a range of 9 different rotors, the Heraeus Megafuge 11 now offers a new high-capacity, 48 x 2 mL **FIBERLite** microtube rotor that supports higher G-forces and offers increased resistance to corrosive agents, making it a safe alternative to conventional metallic rotors.

Genevac has introduced auto-defrost

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The Beckman Coulter ARIES self balancing rotor with adapter

and drain as an option to improve the efficiency and drying effectiveness of its **HT-4X, HT-8, HT-12 and HT-24** centrifugal evaporation systems. The unique auto-defrost and drain capability enables Genevac evaporators to automatically drain the condenser of volatile solvent between stages in a method, and to fully defrost and drain the system at the end of a method with no user interaction. With this feature, volatile solvents that boil off first are collected in the condenser and removed. Higher boiling solvents are removed without the traditional problem of volatile solvent boiling out of the condenser spoiling the vacuum, which can affect the final dryness of samples. Prior to the availability of this feature, a user would be required to be present to manually drain the condenser after the volatile solvents were removed. Applications requiring removal of mixed solvents with differing boiling points, such as lyophilization or evaporation of HPLC fractions, can now be carried out automatically enhancing the efficiency and effectiveness of the evaporation process. An additional benefit of the auto-defrost and drain function is that it will automatically defrost and drain the evaporator at the end of the method, so that it is ready for use the next time.

Beckman Coulter introduces an adapter that spins 50 mL conical tubes in the **Allegra X-15R and X-12 Series** benchtop centrifuge. The new adapter accommodates 28 tubes per run in a BioCertified, self-balancing rotor and is ideal for cell harvesting and blood separation applications. The adapter achieves RCF up to 5,250 x g in the ARIES 4 x 750 mL self-balancing rotor, which detects and automatically corrects for imbalance, continuing the run without shutdown.



The Bio-Rad Model 16K Microcentrifuge and the Mini Centrifuge

“With this new conical tube adapter, we’re delivering a unique combination of advantages – the highest capacity available, BioCertified operation and the self-balancing rotor technology,” commented Barbara Keeler, Strategic Marketing Manager for Beckman Coulter.

The **Universal 320** centrifuge by **Helmer** features a brushless drive, programmable run-up/run-down time, and an impulse key for short spins. The digital control panel stores and recalls 10 complete programs. Speed and run times are programmable in minutes and seconds. The housing is constructed of metal with a stainless steel chamber. Automatic rotor recognition insures proper rotor usage; safety features include lid lock and hold, emergency lid release, and imbalance switch off. The Universal 320 can be equipped with a wide selection of rotors, including 9 swing-outs, 7 fixed angle, and specialized rotors for hematocrit and cytology applications. The new 1418 rotor is capable of spinning 32 - 15 mL conical tubes at a RCF of 3,283 x g and is ideal for applications that include cell culture, blood separation and urinalysis. The comprehensive range of accessories enables the Universal 320 to carry out virtually any centrifuging task, allowing for cost savings and better use of laboratory space.

Bio-Rad has introduced the **Model 16K Microcentrifuge**, a benchtop centrifuge designed for teaching laboratories. This sturdy 18-place centrifuge is supplied with a rotor that accommodates either 1.5 or 2.0 mL tubes. Also new from Bio-Rad is the economical and reliable **Mini Centrifuge**. This centrifuge handles most teaching lab applications, including quick sample spin-downs and cell pelleting. Both units are provided with a rotor and adapters

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Barbara Keeler,
Strategic Marketing Manager,
Beckman Coulter

for different sized tubes.

Millipore Corporation announced the development of a protocol for efficiently compartmentalizing protein solutions using ultrafiltration in a centrifugal mode. Traditional fractionation techniques utilize size-exclusion chromatography, which is both laborious and time intensive. Comparatively, the new protocol confirms the advantage of speed and efficiency by using the Millipore **Amicon Ultra** centrifugal devices, enabling researchers to fractionate protein mixtures quickly and easily.

Eppendorf introduces its **Centrifuge 5424**, an advanced successor of its Centrifuge 5415 D. Available with a variety of rotors, it is supplied standard with aerosol tight rotor and is well suited for the molecular and biological laboratory. Operating this microcentrifuge without the lid closed results in no significant change in sound volume.

Companies mentioned in this Product Focus:

Beckman Coulter – www.beckman.com
Bio-Rad – www.biorad.com
Eppendorf – www.eppendorf.com
Genevac – www.genevac.com
Helmer – www.helmer.com
Millipore – www.millipore.com
NALGENE Labware – www.nalgene.com
Thermo Fisher – www.thermofisher.com

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