IKA®

Success Story

IKA® Dispersers and Shakers
An ideal solution for research laboratories!

Aurigene partners with IKA® to enhance its drug discovery and development portfolio

THE CUSTOMER
Specialists in Drug Discovery and Development

Aurigene is a specialized oncology and inflammatory disease focused drug discovery biotech, with deep target and therapeutic area expertise.

Based in Bangalore and Hyderabad in India and also in Kuala Lumpur, Malaysia, Aurigene has a fully integrated drug discovery infrastructure from hit generation to preclinical development. Aurigene's focus target areas include oncology and autoimmune/inflammatory diseases.

The company works with established pharma companies by early stage partnerships, licensing and co-development, and specialized services in the areas of crystallography, peptide, small molecule synthesis, non-GMP scale-up and ADME assays.

THE CHALLENGE
To disrupt hard cell walled tissues

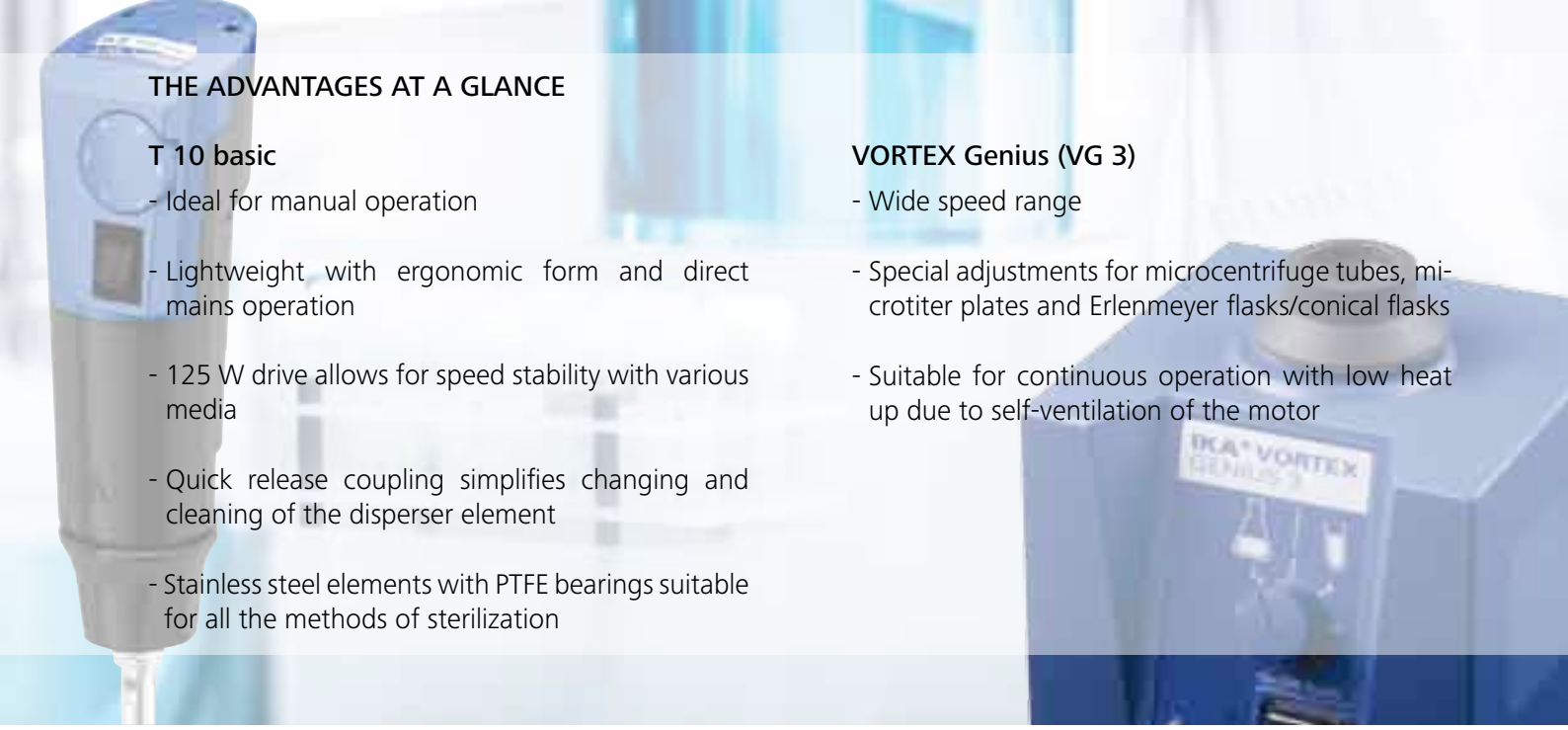
Biotechnology is broadly defined as a technique that uses live organisms viz. bacteria, viruses, fungi, yeast, animal cells, plant cells etc. to make or modify a product, to enhance certain plant or animal traits or to engineer micro-organisms for specific uses.

In this endeavour it is required to isolate the gene, study its function and regulation, modify the gene and reintroduce it into its natural host via another organism and/or vector system. This process helps facilitate the unlocking of secrets associated with disease resistance, regulation of growth and development or the communication pathways utilized by cells and among other micro-organisms.

The main challenge faced when homogenizing tissues is that many organisms, such as seeds and other heavily encased samples, are not efficiently disrupted chemically or through the introduction of enzymes. In these cases, tissue and cell disruption is very difficult to achieve. Also, the energy needed when using these "harsh methods" is usually high and destroy the very proteins being sought. Furthermore, using excessive force is limited because of the generation of detrimental heat and/or shear that can ruin the desired proteins samples.

Dr Shekar S. Chelur, Associate Research Director from Aurigene has quoted that,

"IKA® products are compact with ergonomic designs and are known for reliable performance. IKA® India provides good customer support. Homogenizers with disposable dispersion elements offer great advantage to eliminate cross contamination"



THE ADVANTAGES AT A GLANCE

T 10 basic

- Ideal for manual operation
- Lightweight with ergonomic form and direct mains operation
- 125 W drive allows for speed stability with various media
- Quick release coupling simplifies changing and cleaning of the disperser element
- Stainless steel elements with PTFE bearings suitable for all the methods of sterilization

VORTEX Genius (VG 3)

- Wide speed range
- Special adjustments for microcentrifuge tubes, microtiter plates and Erlenmeyer flasks/conical flasks
- Suitable for continuous operation with low heat up due to self-ventilation of the motor

THE SOLUTION

To produce a uniform homogenate in relatively less time

With such resilient samples mechanical and physical methods that rely on grinding, shearing, beating and shocking are used. The most effective method to make a homogeneous mass is still mechanical -rotor/ stator technology.

Tissues that are difficult to break down include heart muscle, lung, intestine, and skin. The IKA® T 10 basic homogenizer comes with a rotor-stator design with an outer stationary tube (stator) and an inner turning shaft (rotor) which is connected to a motor. At the bottom of the rotor-stator are slots on both the tube and shaft. When running at 8,000 - 30,000 rpm, samples pressed into the slots of the rotor-stator are efficiently sheared. The IKA® T 10 basic is used to macerate animal and plant tissues of increasing mass. The shearing action of the homogenizers produces a very uniform homogenate in relatively little time. Sample sizes processed on handheld T 10 basic homogenizer range from 0.5 ml up to 100 ml.

IKA® offers a range of homogenisers for one to select from - units that can produce a gentle nicking of the cell to release intact organelles in addition to more vigorous disruption to release membrane-bound proteins.

Fragile mammalian cells are broken by moderate shaking (500 – 2500 rpm) of the suspended cells using the IKA® VORTEX Genius 3 (VG 3) shaker. The VG 3 is a simple device which can be used to mix small vials of liquid or to disperse solids into solution. This unit consists of an electric motor and a drive shaft that is oriented vertically and attached to an inverted rubber cap/ base mounted slightly off-centre. As the motor runs, the rubber base oscillates rapidly at 2500 rpm in an orbital motion creating a vortex. When a test tube or other appropriate container is pressed into the rubber base (or touched to its edge) the motion is transmitted to the liquid inside and a vortex is created. The VG 3 has variable speed settings and can be set to run continuously or to run only when downward pressure is applied to the rubber base. It is a versatile product that can be used with three interchangeable attachments and seven inserts for microcentrifuge tubes, microtiter plates and 250 ml Erlenmeyer flasks. IKA® VG 3 units also never shut down even when fully taxed and/or when operating at full speed during a given procedure.

CUSTOMER BENEFITS

Fully flexible homogenisers with a small footprint and quiet operation

Aurigene has been using the IKA® T 10 basic homogenizers and VG 3 vortex shakers for the past 10 years. They have more than 20 of these units installed in the laboratory setting. IKA® homogenizers have helped improve the efficiency and homogeneity of the dispersion process. In addition, these units have increased productivity by saving time through the reduction of the number of cycles by which samples are required to be passed in order to achieve the desired homogeneous phase.

IKA® India Private Limited
814/475, Survey No. 129/1, Mysore Road,
Kengeri, 560060 Bangalore, Karnataka India
Tel. +91 80 26253900 · Fax +91 80 26253901
Hotline. +91 80 26253925 · info@ika.in · www.ika.in