

Smart Notes

QA

How does a CO₂ resistant shaker provide greater reliability, flexibility and ease of use for varied cell culture applications, compared to a dedicated incubated CO₂ shaker?

Flexibility and reliability are the keys to good laboratory equipment and a CO₂ resistant shaker is designed for both. Flexibility allows it to go from the CO₂ incubator to the benchtop to the microbiological incubator, for culturing mammalian suspension cells or insect cells or bacteria and yeast. Reliability comes from sealed electronics, minimal heat production, magnetic orbital drive and stainless steel construction.



Use your existing CO₂ incubator to investigate suspension culture scale-up. A variety of accessories allows shaking culture in different vessels with no need to change heavy platforms. A magnetic controller can be mounted on the incubator door to show status without opening the door. Low vibration even at high speeds and minimal added heat allows stationary culturing in the same incubator to maximize space. And, unlike a combined shaking incubator, a CO₂ resistant shaker can be easily removed from the incubator to facilitate cleaning and disinfection, protecting your cultures from unwanted contamination.

Why choose a CO₂ resistant shaker?

Flexibility is important for your lab

In today's cell culture lab, many different cell types are cultured simultaneously and cost is always a concern. The compact Thermo Scientific™ CO₂ resistant shaker allows you to scale up suspension cultures while continuing stationary cultures inside your existing CO₂ incubator. The CO₂ resistant shaker has multiple platform options, including a large capacity 18 x 18" universal platform to maximize incubator space. This can hold up to eighteen 250 mL flasks and ten 500 mL flasks and allows up to two shelves for parallel adherent cultures.

Figure 1. The Thermo Scientific CO₂ resistant shaker with the standard (14.1 x 11.8") universal platform fits easily into the Thermo Scientific™ Heracell™ VIOS CO₂ Incubator with 100% pure copper interior.

While the shaker efficiently and quietly shakes suspension cells in Thermo Scientific™ Nalgene™ single-use Erlenmeyer flasks, adherent cells are simultaneously grown in 75 cm² Thermo Scientific™ Nunc™ EasYFlasks™ and Thermo Scientific™ Nunc™ Edge 96-well plates.

The ability to choose between a 3 mm or 19 mm orbit model provides solutions for multiple applications. The 3 mm (1/8") orbit was designed specifically for more efficient shaking of microplates and is especially helpful in high throughput screening and expression assays. The 19 mm (3/4") orbit is promotes optimal aeration for standard flasks up to 2 L.

If your lab is interested in protein production from baculovirus in insect cells, the CO₂ resistant shaker can be transferred to room temperature shaking or a refrigerated incubator. Or if you are producing small amounts of protein or DNA in bacteria or yeast, simply put the CO₂ resistant shaker in your microbiological incubator. This flexibility is not possible with a dedicated incubated CO₂ shaker.

Reliability is critical in the CO₂ incubator

Inside a CO₂ incubator, the warm, moist and slightly acidic environment challenges electronics. The Thermo Scientific CO₂ resistant shaker is engineered with specially treated, sealed mechanical parts for robust, long life. For routine cleaning and disinfection, the shaker can be removed

and easily treated at the same time as the incubator; much easier than cleaning spills and contaminants from a dedicated incubated CO₂ shaker. Putting extraneous electronics into your CO₂ incubator can generate additional heat, affecting the functions of the incubator. The chamber temperature could become too hot for cultured cells. However, the Thermo Scientific CO₂ resistant shaker is designed to operate inside CO₂ incubator environments and generates only negligible additional heat of 0.1 to 0.2 degrees throughout the chamber, preserving outstanding cell growth conditions.*

For an additional layer of protection, the Thermo Scientific CO₂ Resistant Shakers external control box comes standard with a 4-20 mA data output for remote monitoring capability.

Summary

The Thermo Scientific CO₂ resistant shaker offers culturing flexibility, reliability, and ease of use for multitasking cell culture labs, compared to a dedicated CO₂ shaking incubator.

* Results from internal testing. Test conducted in a Thermo Scientific Heracell VIOS CO₂ Incubator. Shaker was fully loaded, running at 250 rpm and 37°C, ambient temperature of 24°C or 33°C, for 1 hr. Shaker ran continuously for 5 hr before initiation of test.

Find out more at thermofisher.com/shakers