



Small portable CO₂ incubator for cell cultures

Introduction:

Cell lines grown in-vitro in specialized CO₂ incubators are kept in standard conditions involving constant temperature, CO₂ level (sometimes also O₂) and 100% humidity. However, some experimental procedures demand a transport of live cell cultures leading to an exposition of the cells to the environmental conditions for pro-longed time period. Such exposition can cause indefinable cellular stress potentially interfering with the experimental procedures. To solve such specific situations, we developed portable incubator which keeps constant conditions during the transport.

Technology description:

We developed and successfully tested a small portable cell culture incubator which integrates systems for temperature and CO₂ concentration control and keeps 100% humidity. It can be used as a standard cell culture incubator connected to the external 220 V power and CO₂ source. In case it is needed the incubator can be switched into the transport regime involving its own high-power battery and internal CO₂ source (it has embedded 2L cylinder with liquid CO₂). Disconnected it can keep constant conditions for many hours (depending on environmental conditions and frequency of doors opening). Practical handle, low weight and small size allow one-person transport of the incubator. In case of transport inside a car it can be connected to the standard 12V plugin to save the internal battery. The refilling of internal CO₂ cylinder is done by the user from standard CO₂ cylinders with liquid CO₂.



Key features:

- ▶ Inter-laboratory transport of live cell cultures
- ▶ Transport of live cell cultures towards specialized non-portable machines (ionizing radiation sources, accelerators, NMR etc.)
- ▶ Ability to detect the low of 4 copies of HPV genome in an analyzed sample per PCR reaction

Advantages:

- ▶ High-power LiFePO₄ battery powered
- ▶ Its own source of CO₂
- ▶ Holds 100% humidity
- ▶ Disconnected keeps constant cell culturing conditions for many hours
- ▶ Can be connected to external power sources (220V AC and 12V DC car plugin)
- ▶ Can be connected to external source of CO₂
- ▶ Small size, low weight and practical handle
- ▶ Allows easy refilling of internal CO₂ cylinder from standard CO₂ cylinders



Development status:

Prototype

Commercial offer:

Exclusive/non-exclusive license to the know-how and data

Ownership:

Institute of Molecular and Translational Medicine, Faculty of Medicine and Dentistry, Palacky University, Olomouc
Brno University of Technology

Contact:

More information is available upon signing a CDA/NDA.
Please contact IMTM's director (director@imtm.upol.cz) or the technology transfer office (tto@imtm.upol.cz)

