

Case Study

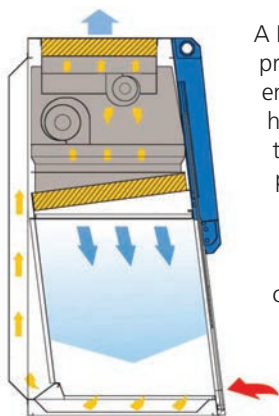
Choosing the right safety cabinet to advance your gene therapy research

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Gene Therapy is a rapidly expanding market within the global biotechnology industry. Using techniques such as CRISPR, a gene editing technology, the aim is to treat and prevent diseases. By inserting or altering harmful genes in a patient cell, it can reduce the need for surgeries or drugs.

The UK is at the forefront of advancing Gene Therapy technology accounting for 12% of global gene and cell trials [1]. Innovation hubs such as those in White City, London and Stevenage have spearheaded this development.

To carry out this experimental work, companies require specialist systems and infrastructure. Biopharma recently installed 10 Premium 212 Microbiological Safety cabinets to a Gene Therapy company based in white City, London. This is now the second company within the emerging hub of innovative life sciences start-ups to install Faster safety cabinets.



A Microbiological safety cabinet provides product, personnel and environmental protection while handling biological samples such as in tissue culture, biological testing and pathogenic samples.

The ambient air is drawn in from the slots at the stainless-steel base of the front opening and it then passes under the work surface, from where it is drawn up and blown into the plenum of the re-circulating and exhaust fan(s).

Figure 1. Diagram showing how the negative pressure ensures that all contaminated particles are kept inside the system providing user and product protection.

The 'bio-dynamic sealing system' of the negative pressure plenum ensures that all contaminated particles are kept inside

the system and are automatically drawn to the plenum or pressure chamber to be captured by the main re-circulating and exhaust H 14 HEPA/ULPA filters, thus protecting the user, product and environment.

70% of the filtered air is re-circulated (after passing through a H14 HEPA/ULPA filter), an air cleanliness in Class ISO 3, according to ISO 14644-1 laminar flow pattern downwards into the work chamber and the remaining 30% is exhausted to atmosphere through another H14 HEPA/ULPA filter.

Features that should be considered when purchasing a Class II cabinet are safety, cost (both upfront and energy cost) as well as noise and location. The Premium 212 is one of the most energy efficient cabinets in the market with an annual running cost of 0.084kWh meaning a running cost of £17.40 per year. It is also one of the quietest at 42dB meaning a lab with several cabinets side by side can be a relaxing and suitable work area for any kind of experiment. Other features include dimmable LED lighting, magnetic and removable UV sterilising lamp, electronic angled sliding sash and work surface in stainless steel AISI 316L.

At Biopharma we will always provide advise on your requirements. We regularly visit sites to help decisions such as locations and carry out site surveys. Oh and did someone say we also keep stock of most Class II cabinets.

References

1. <https://pharmaphorum.com/news/uk-accounts-for-12-of-cell-and-gene-therapy-trials-report/>



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