



Genano Application Note

Increase success rate of in-vitro fertilisation with purified air

A considerable part of success in in vitro fertilisation (IVF) is determined by environmental factors related to the laboratory environment where the fertilisation and treatment procedures are carried out. In addition to optimal environment, factors such as maternal age and cause of infertility are important for ensuring a successful pregnancy. An optimal environment is crucial for ensuring high quality embryos with good viability.

Recent research has shown that the **laboratory air quality can have a drastic effect on the IVF outcome**. Volatile organic compounds (VOCs), microbes and particles are all known to have a negative effect on embryonic development. Contaminants can enter the laboratory from various sources including supply air, personnel and equipment. Once they interact with samples, tissues or anything in contact with the cells,



5% success rate increase
with Genano air purifier in the
laboratory*

* with all other variables taken into account, empirical study in Crown IVF Cyprus clinic.

the damage is done. Nanosized ultrafine particles, which cannot be eliminated with HEPA filters, are dangerous as they can attach to and penetrate the cells and interfere with development processes.

VOCs (e.g. styrenes, formaldehydes, glutaldehydes, toluene) are especially harmful to embryos. These small compounds can directly attach to DNA and terminate growth. Studies have established that even small amounts of VOCs in the ambient laboratory air can decrease pregnancy rates. In laboratories, VOCs can originate from equipment, disposables, construction materials and clothing.

Hence, optimal air purification systems for IVF combine nanoscale particle removal and active carbon to eliminate all chemical and particulate contaminants. Improved embryo viability due to air hygiene combined with positive pressure with the laboratory and general sterility precautions can prevent contamination and thus improve the IVF success rate.

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99 Since using Genano air purifiers we have had a marked increase in our success rates in terms of first time pregnancy results and less miscarriages.

Dr. Halil Tekin, Owner & head doctor, Crown IVF Cyprus

CLEANROOMS FOR IVF with Genano air purifiers



NANOSCALE CONTAMINATION CONTROL

Genano air purifiers are an efficient way to reduce airborne contaminants in IVF laboratories to increase success rate.

Genano's core advantage is the ability to collect and eliminate airborne contaminants down to **3 nanometers**, unmatched by any other air purifying technology.

Genano air purifiers are equipped with **high-surface-area active carbon collectors** that remove gaseous substances such as VOCs, which are especially those that are detrimental to embryos.

**GENANO
TECHNOLOGY
PROVENLY
REMOVES**



CONTINUOUS CIRCULATION & PURIFICATION

Genano air purifiers are designed to continuously recycle and purify indoor air. Genano can be used as a fully functional IVF cleanroom solution or as a complementary system to central ventilation.

Genano air purifiers can be located near the most critical processes to provide constant air flow and cleanliness level.

The Genano solution is always designed to fit any laboratory-specific needs for ACH, pressurization and other technical details.



INNOVATIVE FILTER-FREE TECHNOLOGY

Genano Technology cleans the air in free air flow, so the air volume and the purification level are constant at all times.

Genano air purifiers do not get clogged up by large amounts of particles as is the case with HEPA filters, and no exchange of expensive filters is required.

The performance of Genano Technology has been tested and researched comprehensively in laboratory and real use conditions.

PARTICLES

dust & fibers
nanoparticles
DNA fragments
proteins, lipids

MICROBES

Aspergillus niger
Escherichia coli
Staphylococcus aureus

VOC GASES

Isopropanol
Formaldehyde
Toluene
Softeners, Odours

