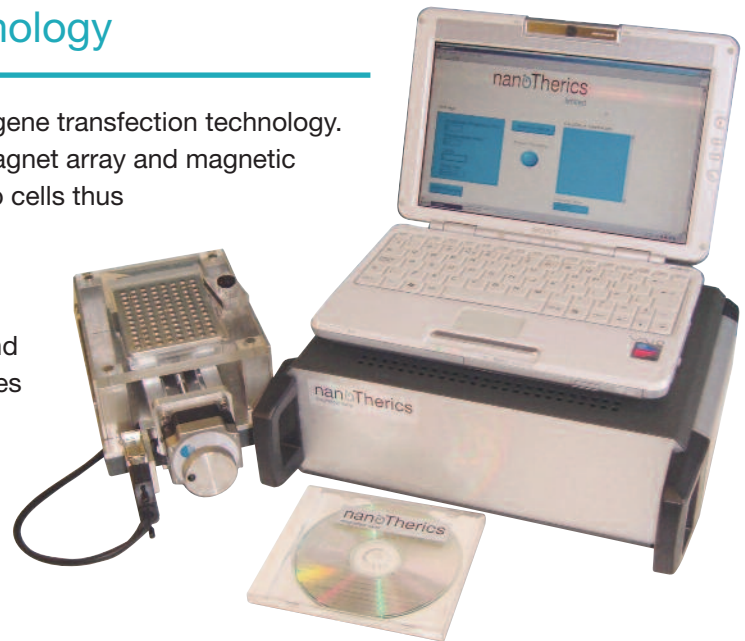


# magnefect-nano™

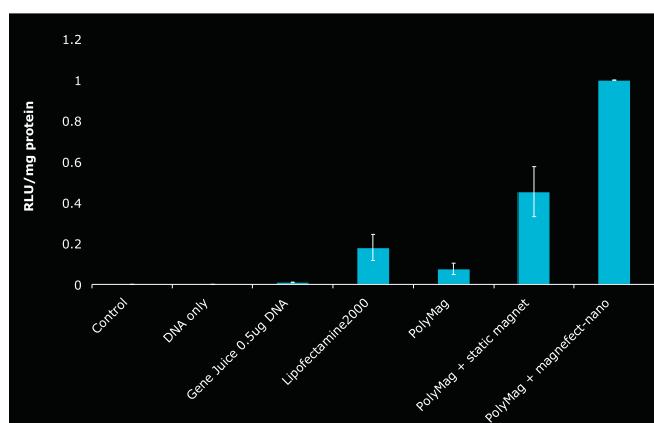
The system for improved gene transfection

## magnefect-nano - proven technology

nanoTherics Limited has developed an improved gene transfection technology. The **magnefect-nano** uses a unique oscillating magnet array and magnetic nanoparticles to promote particle/DNA uptake into cells thus significantly improving non-viral gene transfection whilst maintaining cell viability. The technology follows from cutting edge research into magnetic nanoparticle use conducted at Keele University and the University of Florida. The **magnefect-nano** uses proprietary magnet configurations and oscillating array systems to provide highly improved transfection efficiency and effectiveness: (up to 1,000 x) over the best currently available cationic lipid agents at short transfection times.



## Comparing transfection methods shows superior performance



### Comparison of transfection methods

Normalised data from six experiments (N = 72) showing luciferase activity in NCI-H292 human lung epithelial cells transfected with pCIKLux luciferase reporter construct using OzBiosciences polymag® particles in response to static and oscillating magnetic fields at 200 µm amplitude and 2Hz and comparing with other transfection methods (results from nanoTherics **magnefect-nano** oscillating field seen on right of bar graph)

## magnefect-nano - main features and benefits

### Use

- Significantly faster transfection times – speeds up your experiments
- More efficient transfection: provides improved results
- No adverse effects on cell viability: enables potential for *in vivo* use
- Simple and inexpensive to use: reduces costs
- Small footprint, compact: minimal bench-space needed
- Simple to operate: short set-up times
- Easy to program and use: provides flexibility for different cell types
- Simple protocols: pre-programmed protocols and flexibility for user-defined protocols to allow quick, easy optimisation of transfection conditions for maximum flexibility and best possible results
- Minimal steps in process: no need for wash steps or for special buffers / media

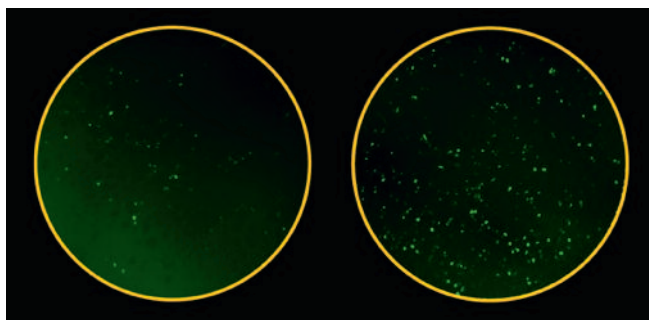
The following are examples of cells that have been transfected using the **magnfect-nano**:

- HEK - human embryonic kidney cells
- NCI-292 - human lung epithelial cells
- Human mesenchymal stem cells (Cambrex)
- MG63 - human osteoblasts (osteosarcoma cell line)
- HFF - human foreskin fibroblasts

nanoTherics also supplies a range of competitively priced, high quality magnetic nanoparticles for use with the **magnfect-nano**. These reagents have been tried and tested for optimal performance for use on the system to provide you with best possible results. For further details contact us now.

## Flexibility and performance

- Faster transfection times with improved transfection levels
- No adverse effects on cell viability with reduced toxic response
- Potential to target / penetrate physical barriers *in vivo* (e.g. mucous layers for cystic fibrosis gene transfection)
- Use with 'hard to transfect' cells / cell lines
- Higher success rates
- Arrays to suit most tissue culture plate formats
- Scalable for high throughput screening
- Allows transfection with low amounts of biomolecules
- Potential to translate to *ex vivo* and *in vivo* clinical use



EGFP expression in HEK293T cells transfected with 150 nM Micromod Nanomag<sup>®</sup>-D-SPIO PEI magnetic nanoparticles coated with pEGFPC1 DNA in response to static magnetofection (*left*) and magnfect-nano<sup>™</sup> oscillating array transfection (*right*). All transfections were performed in serum-free RPMI 1640 media and exposed to magnet fields for 2 hours. At 2 hours post transfection, the magnets were removed and at 48 hours post transfection, the samples were assayed for EGFP using fluorescence microscopy.

## Specifications

### Dimensions

|                      |          |          |          |
|----------------------|----------|----------|----------|
| Controller           | H 100 mm | W 330 mm | D 270 mm |
| Array                | H 100 mm | W 150 mm | D 330 mm |
| Plus laptop computer |          |          |          |

### Weight

|                      |               |
|----------------------|---------------|
| Controller           | 5 kg (approx) |
| Array                | 3 kg (approx) |
| Plus laptop computer |               |

Electrical current draw for array and controller: 3.1 A  
Input voltage 110 to 230 V AC RMS

### Part numbers

The **magnfect-nano** system: Part no. 001

## Cost-effective purchase

The **magnfect-nano** is a competitively priced system which is cost-effective to use, providing improved gene transfection capability.

The system comes with full twelve-month warranty to provide you with peace of mind.

For further details, or to request a quotation, contact us now.

## Contact details

**Headquarters - United Kingdom**  
nanoTherics Limited  
Guy Hilton Research Centre  
Thornburrow Drive  
Stoke-on-Trent ST4 7QB, United Kingdom

**Tel** +44 1782 554047  
**Fax** +44 1782 747319  
**Web:** [www.nanotherics.com](http://www.nanotherics.com)  
**Email:** [enquiry@nanotherics.com](mailto:enquiry@nanotherics.com)