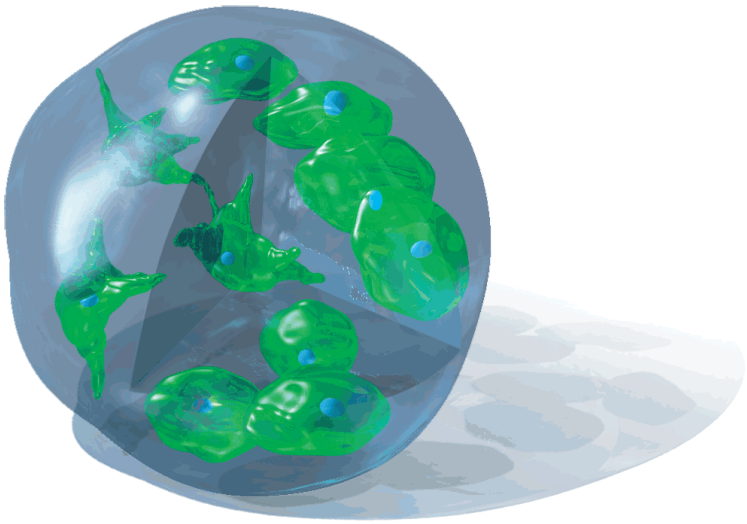
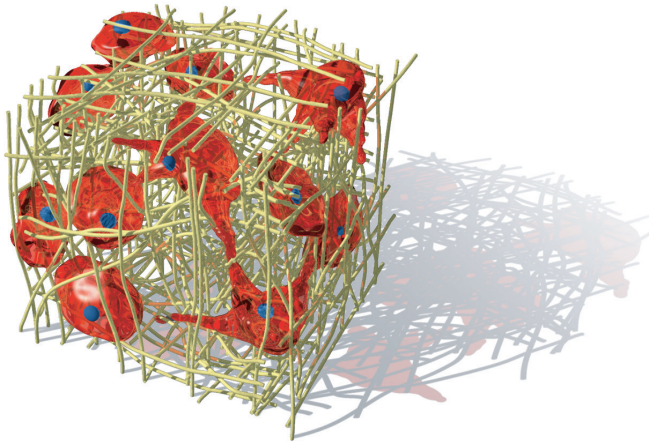
OZBIOSCIENCES
The art of delivery systems





A new outlook for your cells

3D-Fect™ & 3D-FectIN™

3D TRANSFECTION

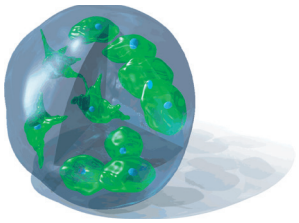
TRANSFECTION IN

Three-dimensional (3D) matrices allow cultivating cells *in vitro* in a more natural way. 3-D cell cultures assist the cell physiology analysis under conditions that more closely resemble to an *in vivo*-like environment compared to conventional 2-D culture.

Since last decade, it has been proposed that genetically modified cells growing on-, or embedded in 3D matrices could be used as a drug controlled release system. Biomaterials for controlled delivery of plasmid DNA or siRNA can thus provide a fundamental tool to target transgene expression (over express or block) or can offer new perspectives for gene or cell therapy.

- **3D-Fect™ Transfection Reagent** is developped to directly transfect cells cultured in 3D Scaffold.
- **3D-FectIN™ Transfection Reagent** is compatible with any hydrogel and allows transfecting cells directly cultured onto/into a hydrogel with a high efficiency.

Tissue engineering, tissue regeneration, tumor invasion, neural differentiation, cellular polarization, tissue formation, colonization, neurite growth, angiogenesis, tube and acini formation…



The 3D-FectIN™ transfection reagent is compatible with any hydrogel and allows transfecting cells directly cultured onto/into a hydrogel without altering gelation or polymerization.
3D matrices allow cells to grow in micro-environment that more closely mimics the 3D environment encountered by cells *in vivo*. Thus, hydrogel-based 3D matrices combined with 3D-FectIN/DNA complexes allow cells to be directly transfected in more natural surroundings.

Superior Gene Expression

3D-FectIN™ is highly efficient and suitable for any cells: immortalized and primary.
Transgene expression is high and long-lasting.

High Production Yield for Antibody

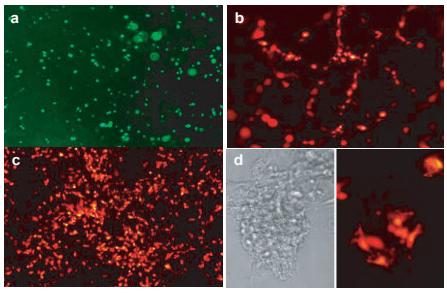


Fig1: DNA Transfection of various cells on different gels with 3D-Fectin.

Outperforms Competitors

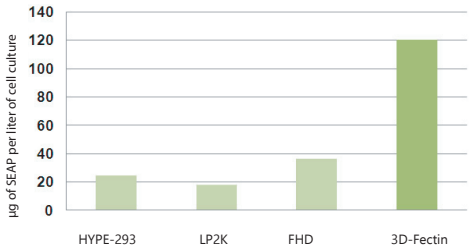


Fig2: NIH-3T3 transfected in a collagen-derived hydrogel with 3D-FectIN and others reagents.

Efficient Gene Silencing

3D-FectIN™ is also designed for silencing gene expression in cells cultured in gels (or hydrogels).

Efficient siRNA Transfection in Hydrogels

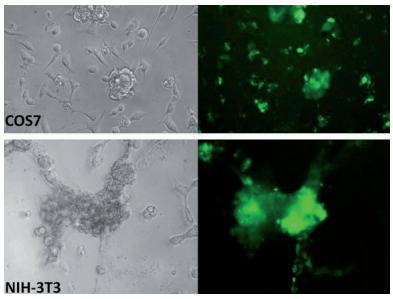


Fig3: 3D-FectIN™ allows efficient siRNA transfection in hydrogels.

Outperforms Competitors

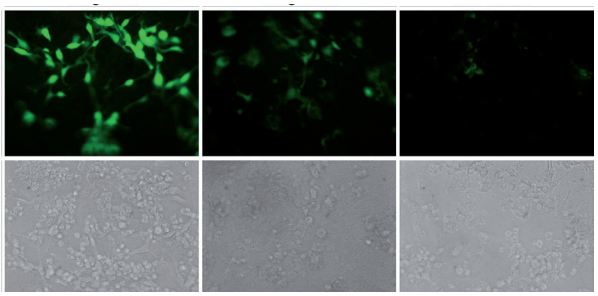
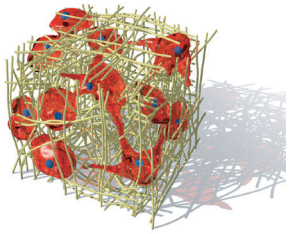


Fig3: 3D-FectIN™ allows efficient siRNA transfection in hydrogels

3D HYDROGEL

3D CELL CULTURE

HYPE-CHO™ Transfection Kit has been designed for large scale up transient transfection and high protein expression such as antibody. The system is optimized for maximum efficiency in all CHO-S cells. It has been validated with cells used to produce proteins from different origins (CHO, CHO-S, rCHO or any CHO-related cells) cultured in suspension (flask, spinner and bioreactor).



3D SCAFFOLD

High Protein & Antibody Yield

High production Yield for Antibody

HYPE-CHO™ Transfection Kit achieves high antibody production level and largely outperforms other commercially available transfection reagents.

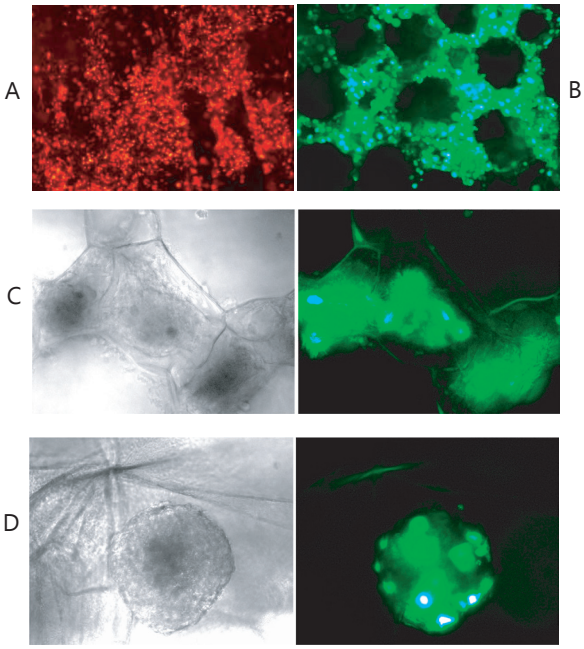


Fig5: Cells transfected on various 3D-scaffolds.
a. HEK-293T - b. HeLa - c. MEF - d. Neural Stem Cells

Long Term Protein Expression

3D-Fect™ transfection reagents allows 3D trangene expression studies in *in vivo* like conditions over a long time period.

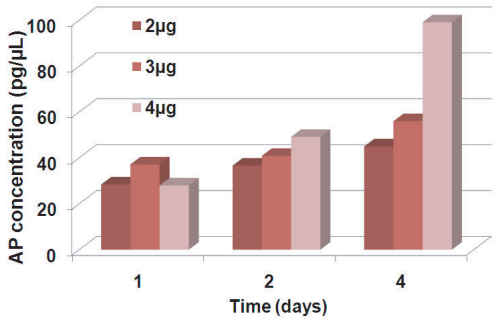
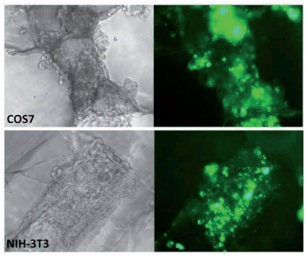


Fig7: HMEC-1 transfected with 2, 3 or 4µg of DNA in a collagen-derived 3D-Scaffold.

Efficient Gene Silencing

Fig3: 3D-Fect™ allows efficient siRNA transfection in 3D Scaffold: Collagen-derived scaffolds were loaded with 50 nM of fluorescently labelled siRNA complexed to 8 µL of 3D-Fect™ transfection reagent. Transfection efficiency on COS-7 and NIH-3T3 cells was observed by fluorescence microscopy after 48 h.



HOW DOES IT WORK

Based on a new technology, our 3D transfection reagents allow for a long term transgene expression (intracellular or secreted) or gene silencing in 3D Cell Cultures.

First, the nucleic acids (DNA, siRNA) are mixed with the 3D transfection reagent to form complexes. Then, those complexes are combined with the appropriate 3D matrices. **Finally, the modified 3D matrices are colonized by cells to be transfected.**

- **Reach** optimal Protein & Antibody production yield in suspension CHO & 293 cells
- **Obtain** reproducible protein expression at various scales with minimal optimization
- **Enjoy** compatibility with multiple media formulations
- **Meet** the quality requirements

Broad-spectrum Media Compatibility

HYPE-293™ & HYPE-CHO™ Transfection Kits are compatible with multiple synthetic or regular culture media. They have been tested with various chemically defined media.

Examples of 3D-Hydrogels successfully tested

Collagen-Based Hydrogels
Collagen-Derived Hydrogels
Hyaluronic Acid
Extracellular Matrix (ECM)
Fibrin / Fibronectin
Fibrinogen
Laminin
Matrigel ™ (BD Biosciences)
PEGylated hydrogels

Collagen-based Scaffolds
Collagen-derived Scaffolds
Hyaluronic Acid
Millicell ™ (PTFE) (Millipore)
Polycaprolactone
Poly(Ethylene Glycol)
Poly(lactic-co-glycolic acid)
Poly(Styrene)
Poly(Urethane)

ADDITIONAL PRODUCT

HYPE-5™ Transfection Kit

Dedicated to achieve **H**igh **Y**ield **P**rotein **E**xpression in mammalian cells.
This Kit has been designed for maximum recombinant protein expression in both HEK293 and CHO cells growing in suspension.

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Medium	HYPE-293™
FreeStyle™ 293	✓
Expi293™	✓
EX-CELL® 293	✓
Pro293™ -CD	✓

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