OZBIOSCIENCES
The art of delivery systems

A NEW AGENT.
NOT JUST ANOTHER ONE

Helix-IN™

An optimized delivery system that minimizes toxicity & reduces cellular stress while yielding high efficiency

DNA Transfection Reagent

DNA DELIVERY - A BRAND NEW TECHNOLOGY

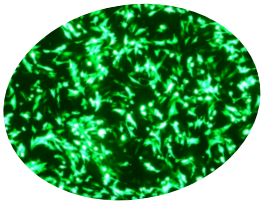
Helix-IN™ opens up new possibilities for addressing issues of classical transfection technologies

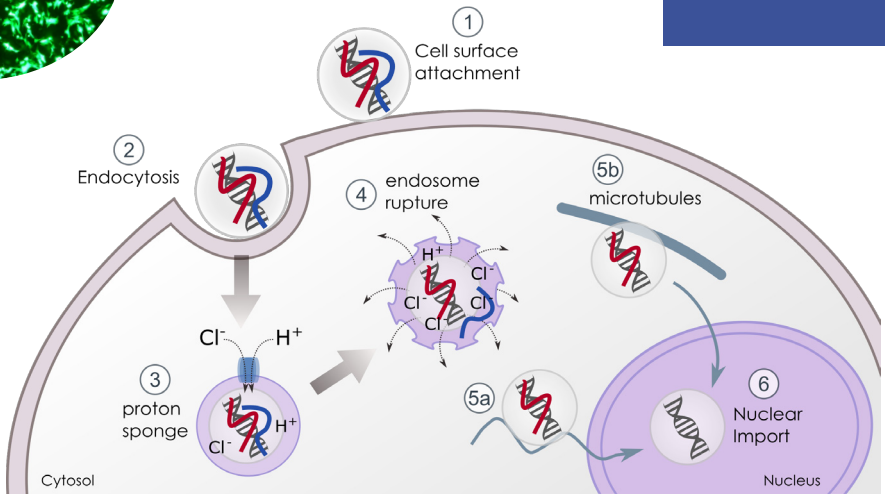
OZ Biosciences revolutionizes Polyfection with the design of **Helix-IN™**, a novel patented **C**ationic **H**ydroxylated **A**mphipilic **M**ulti-block **P**olymer (*CHAMP™* Technology).

This novel bi-functional co-polymer is biocompatible, ionizable, pH responsive and biodegradable. It combines 3 synergistic notions:

- The concept of «*passing through the membranes barriers*» due to its charge, pH sensitive and hydrophobic properties
- The idea of «*stealth transfection*» where DNA is protected, masked and chaperoned all the way to its nuclear uptake
- The concept of biocompatibility due to biodegradable and cleavable moieties

Cellular stress is reduced, viability preserved and efficiency enhanced.

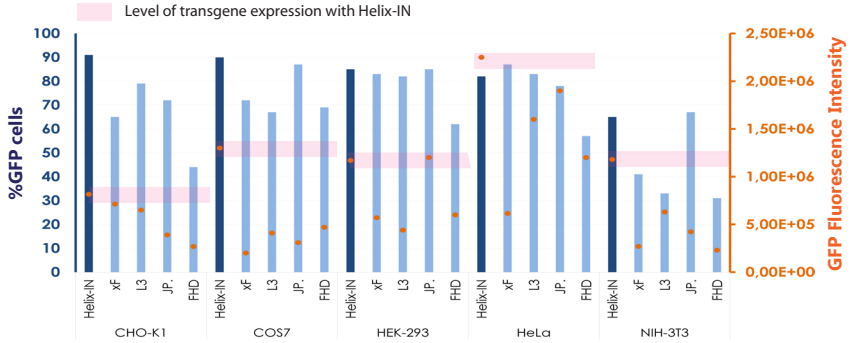




Intracellular trafficking of polyplexes. Excess of polycations at the surface of the polyplex allows attachment to the cell surface **(1)** and uptake or internalization by the target cell, generally through endocytosis **(2)**. Once into endosome vesicle **(3)**, higher degree of protonation of the proton-sponge polymer causes influx of ions and the pH responsive linker is cleaved, releasing the first polymer unit (blue). The increase of osmotic pressure that leads the vesicle to swell and rupture is favored by the exposition of the hydrophobic domain of the linker **(4)**. The third unit (red) remains bound to the nucleic acid thus lowering the sensing of the DNA by the cell and assisting its nuclear delivery through direct import into the nucleus **(5a)** or via microtubules trafficking **(5b)**. Once inside the nucleus **(6)** the DNA is then expressed.

Helix-IN™ Outperforms Classical Transfection Reagents

1- High Transfection Efficiency & Increased Transgene Expression

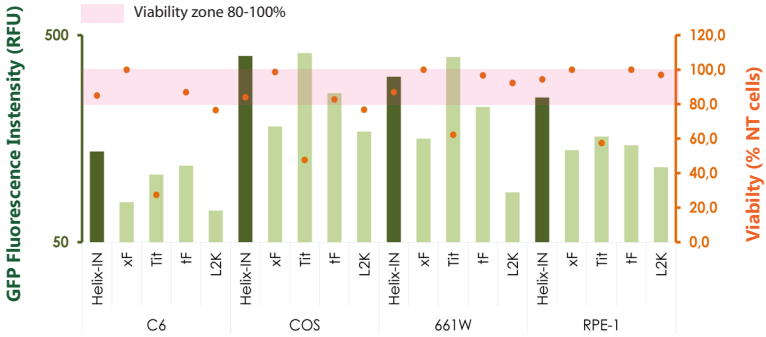


Transgene Expression

Fig1: **Transfection efficiency in classic cell lines with Helix-IN compared to competitors**

xF: Xfect
L2K/L3: Lipofectamine 2000/3000
JP: JetPRIME
FHD: FuGENE HD
Tit: TransIT-X2
tF: TurboFect

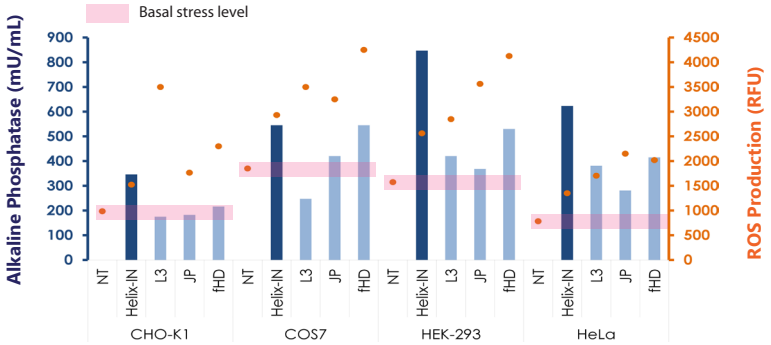
2- High Intracellular Protein Production while Preserving Viability



Viability

Fig2: **Helix-IN vs competitors for intracellular protein production and Toxicity**

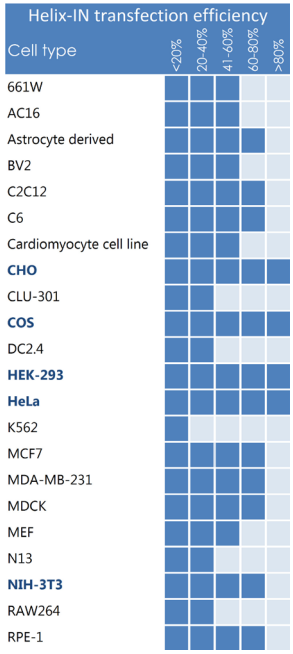
3- High Secreted Protein Production while Minimizing Cellular Stress



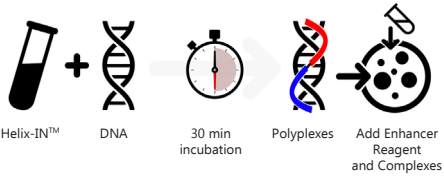
Cellular Stress

Fig3: **Helix-IN vs competitors for Secreted Alkaline Phosphatase protein production and ROS (Reactive Oxygen Species) generation**

Helix-IN™ Principal Application
DNA transfection for immortalized **cell lines** preferentially **adherent** such as HEK-293, NIH-3T3, CHO, COS, HeLa



What about the protocol?



High Cost-performance

Less DNA, less reagent but more results

6 well-plate			
Reagent	Volume of reagent per well	Amount of DNA per well	Number of Transfections per 1mL vial
Helix-IN™	2 - 4	2	250 - 500
L3	3.75 - 7.5	2.5	133 - 363

Recommended amounts of DNA and ratios reagent/DNA per well in 6-well plate for transfection according to manufacturers' recommendations.

Catalog numbers

- HX10100 - 100µL
- HX10500 - 500µL
- HX11000 - 1mL

Contains one vial of Helix-IN reagent and one vial of HIB Enhancer reagent.

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