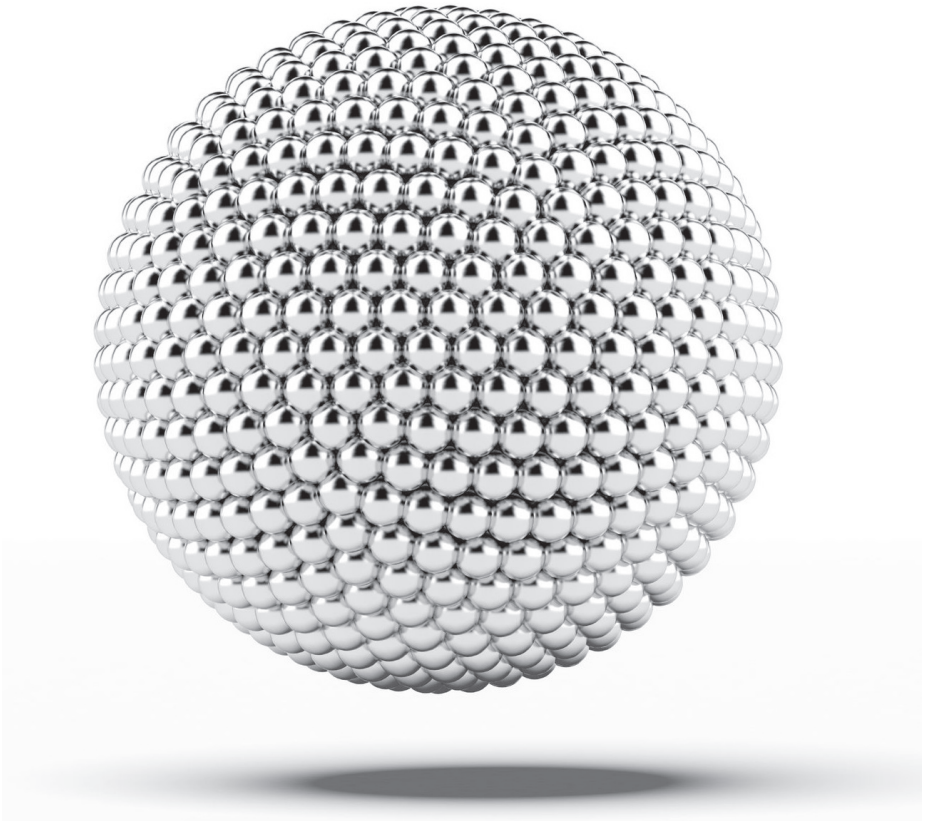
OZBIOSCIENCES
The art of delivery systems



Magnetic Nanoparticle Technology
Capture, Concentration & Conservation

Viral Applications

Mag4C Kits - Virus Capture & Concentration

ALL VIRUSES
ALL CONDITIONS

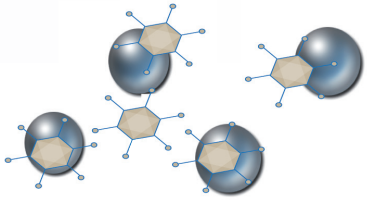
CAPTURE - CONCENTRATION

MAGNETIC NANOPARTICLE TECHNOLOGY

Traditional methods for viral capture or purfication such as ultracentrifugation, PEG precipitation, on-column separation (...) are time-consuming, need bio-hazardous handling, reduce infectivity and are often interfering with cell culture or methods of detection.
In order to overcome these challenges, OZ Biosciences has designed and developped an alternative and efficient method for capturing, concentrating and storing viral particles.

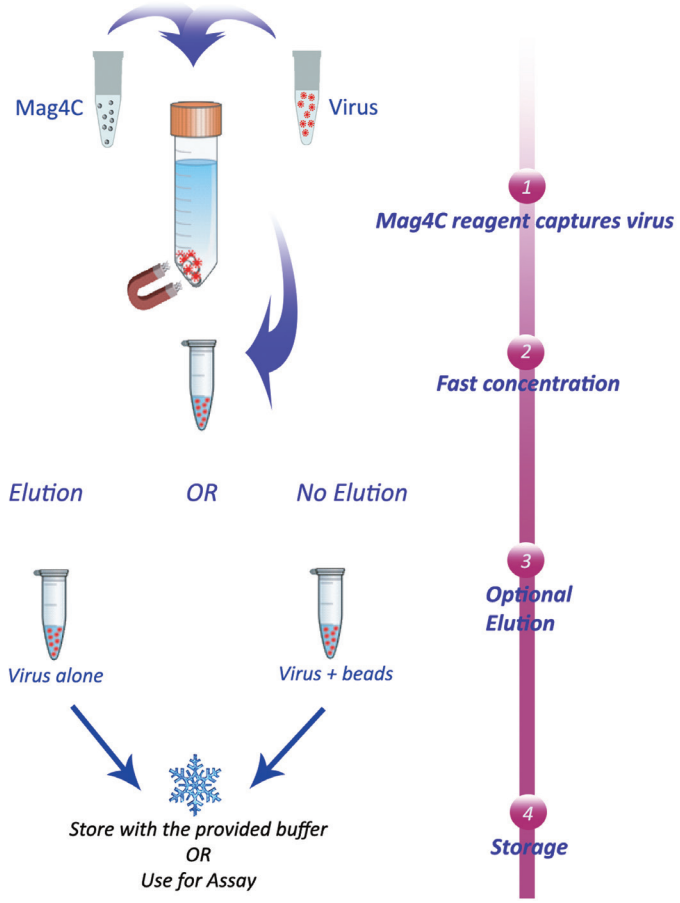
Mag4C Kits are composed of 3 reagents allowing Magnetic Capture/Concentration, Elution and Conservation of viruses.
Mag4C magnetic nanoparticles capture viruses in culture medium through electrostatic and hydrophobic interactions with 80-99% efficiency. Once captured onto magnetic beads, viruses can be:

- Concentrated and stored with the Conservation Buffer or directly used for downstream assays
- Concentrated, eluted from the magnetic beads with the Elution Buffer and stored with the Storage Buffer or used for various assays



Rapid, Simple & Ready-to-Use

Mag4C Procedure



Magnetic Capture & Concentration

- Concentrate viruses by magnetic capture in 30-45 minutes
- Obtain high yield of viral capture and recovery
- Reduce handling steps - Avoid ultracentrifugation, precipitation and chemicals.
- Mag4C beads improve transduction efficiency (Magnetofection advantages)
- Suitable for all conditions & viruses
  2 different products available:
  - Mac4C-Ad for adenoviruses
  - Mag4C-LV for lenti- & retro-viruses

Conservation Buffer

- Improve virus stability under storage conditions

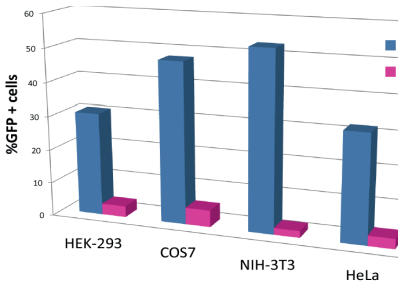
& CONSERVATION OF VIRUSES

CAPTURE & CONCENTRATION

Mag4C: Virus Capture Efficiency

Mag4C beads efficiently capture virus since supernatants (SN) are nearly no more infectious (absence of virus) whereas viral particules bound to the Mag4C beads are highly infectious.

Lentivirus Capture by Mag4C beads



Freshly produced or purchased virus is mixed with Mag4C beads for capture and concentration. Viruses captured by Mag4C-Lv magnetic nanoparticles were concentrated on the Magnetic Separation Rack. The viruses bound to the Mag4C-Lv beads were retained by the magnetic field, the supernatant was removed and the pellet was re-suspended in a smaller volume in order to concentrate the solution (2x to 100x).

HEK-293 Cells

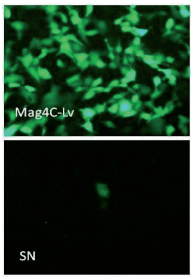


Figure 1/2:
Both supernatant (SN) and re-suspended magnetized virus (Mag4C-Lv) were tested for infectivity on cells. Cells were analyzed 24h post-transduction and the number of GFP positive cells (%) was monitored by flow cytometry.

Fast & Adjustable Concentration

The magnetic action of the nanoparticles allows a rapid concentration of viral particles with minimized hazardous handling for a high yield of viral capture and recovery. The use of a magnetic field is simple, rapid and easy to use, and avoid time-consuming ultracentrifugation, precipitation and chemical steps.

% of COS7 Infected after Capture & Concentration

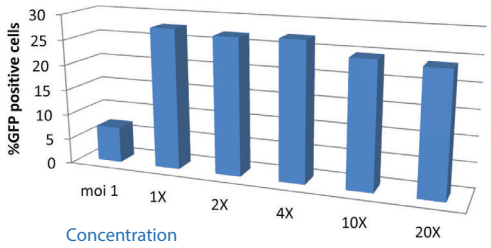
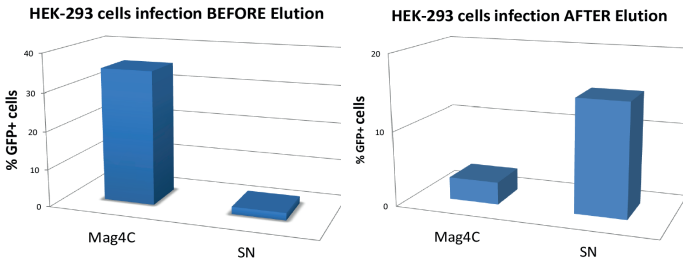


Figure 3:
After capture, virus complexed to Mag4C beads can be concentrated without losing transduction efficiency.

ELUTION & CONSERVATION

Easy Elution of Virus from Beads - Improved Conservation

Once concentrated, the viral particles can be stored in the conservation buffer either bound to the magnetic nanoparticles or eluted. You can choose to keep the beads associated with the virus or remove them and have a «bread-free» concentrated virus. The Elution Buffer is highly effective in separating viruses from Mag4C-Lv beads and allows concentration of eluted viruses.



Elution is straightforward, easy and very efficient. Mag4C beads were no more infectious after the elution procedure. – *SN: eluted supernatant*

Figure 4: Elution is straightforward, easy and very efficient. Mag4C beads were no more infectious after the elution procedure. – *SN: eluted supernatant*

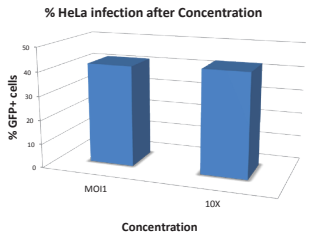


Figure 5: Captured, eluted and concentrated virus is as infectious as untreated virus.

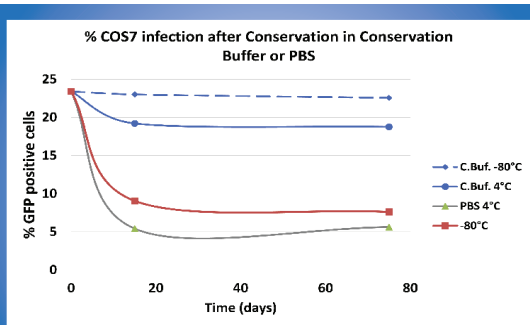


Figure 6: Viral particles stored in conservation buffer maintain high infectivity over long-term storage.

Ordering Information

Mag4C-Ad Kit* - specific for Adenovirus

Cat # ATK11200 - Mag4C-Ad beads (0.2 ml) + Elution buffer (5mL) + Conservation buffer (0.2 mL) - Up to 20 assays

Cat # AKC11000 - Mag4C-Ad beads (1 mL) + Elution buffer (5mL) + Conservation buffer (1 mL) - Up to 100 assays

Mag4C-LV Kit* - specific for Lentivirus & Retrovirus

Cat # LTK11200 - Mag4C-Lv beads (0.2 ml) + Elution buffer (5mL) + Conservation buffer (0.2 mL) - Up to 20 assays

Cat # LKC11000 - Mag4C-Ad beads (1 ml) + Elution buffer (5mL) + Conservation buffer (1 mL) - Up to 100 assays

*A Magnetic Separation Rack designed for 50, 15 or 1.5 mL tubes is available separately. It can hold twelve standard microtubes, two 15 mL and two 50 mL tubes.

LEARN MORE ABOUT MAGNETOFECTION™ - PRINCIPLE

Mag4C beads are compatible with the Magnetofection™ technology. Magnetofection™ is a simple and highly efficient method to transfect cells. This technology exploits magnetic force to drive viruses associated with magnetic nanoparticles into targeted cells.

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USA & CANADA
OZ Biosciences USA Inc.
7975 Dunbrook Road,
Suite B
San Diego, CA 92126,
USA
Ph: +1 858 246 7840
Fax: +1 855 631 0626
E-mail: orderusa@ozbiosciences.com

OZBIOSCIENCES
The art of delivery systems

FRANCE & EUROPE
OZ Biosciences SAS
Parc Scientifique de Luminy
zone entreprise, case 922
13288 Marseille Cedex 09
FRANCE
Ph: +33 486 94 85 16
Fax: +33 463 74 00 15
E-mail: order@ozbiosciences.com

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