

OFF-THE-SHELF NK-DERIVED EXTRACELLULAR VESICLES (NKEVs)

A Field-Ready Deployable Immunotherapeutic Platform for Military Medicine, Readiness & Health Security

Effective | Safe | Stable | Scalable | Easily Distributed | Field-Ready

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MHSRS

MILITARY READINESS

Force Protection & Recovery

- Operational readiness
- Force health protection
- Recovery & resilience

HEALTH SECURITY

Pandemic & Threat Response

- Emerging threats
- Pandemic preparedness
- Distributed healthcare

DISTRIBUTED COUNTERMEASURES

Scalable Biologic Logistics

- Scalable manufacturing
- Stockpiling potential
- Rapid deployment

NK Cell [6,000nm] --> NKEV / Exosome [100nm] --> [Deployable Therapeutic]

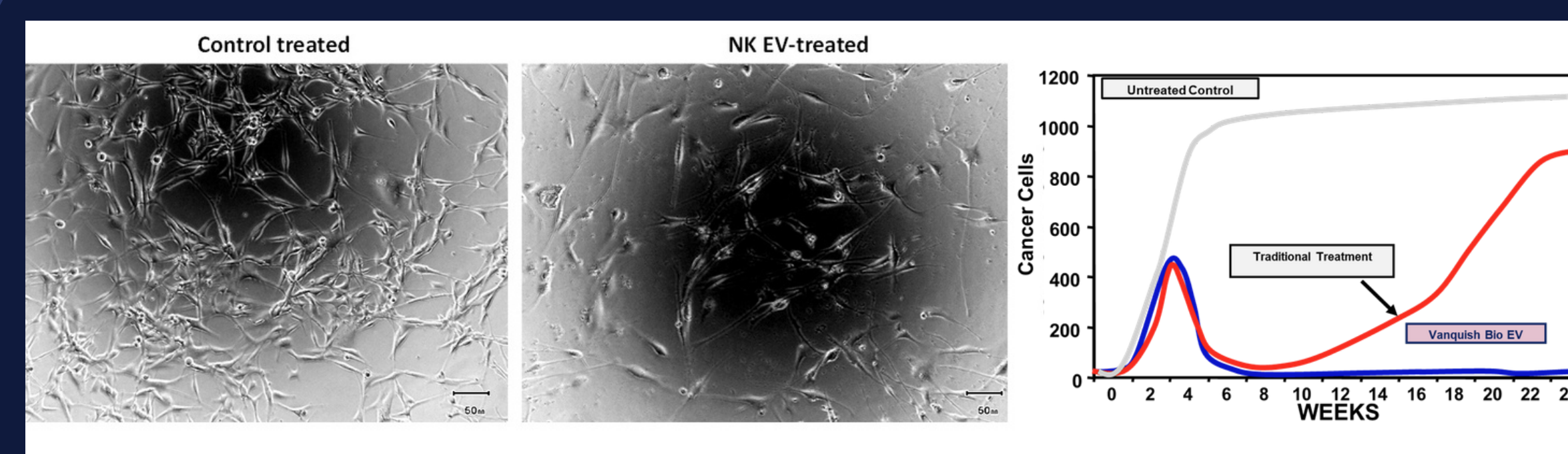
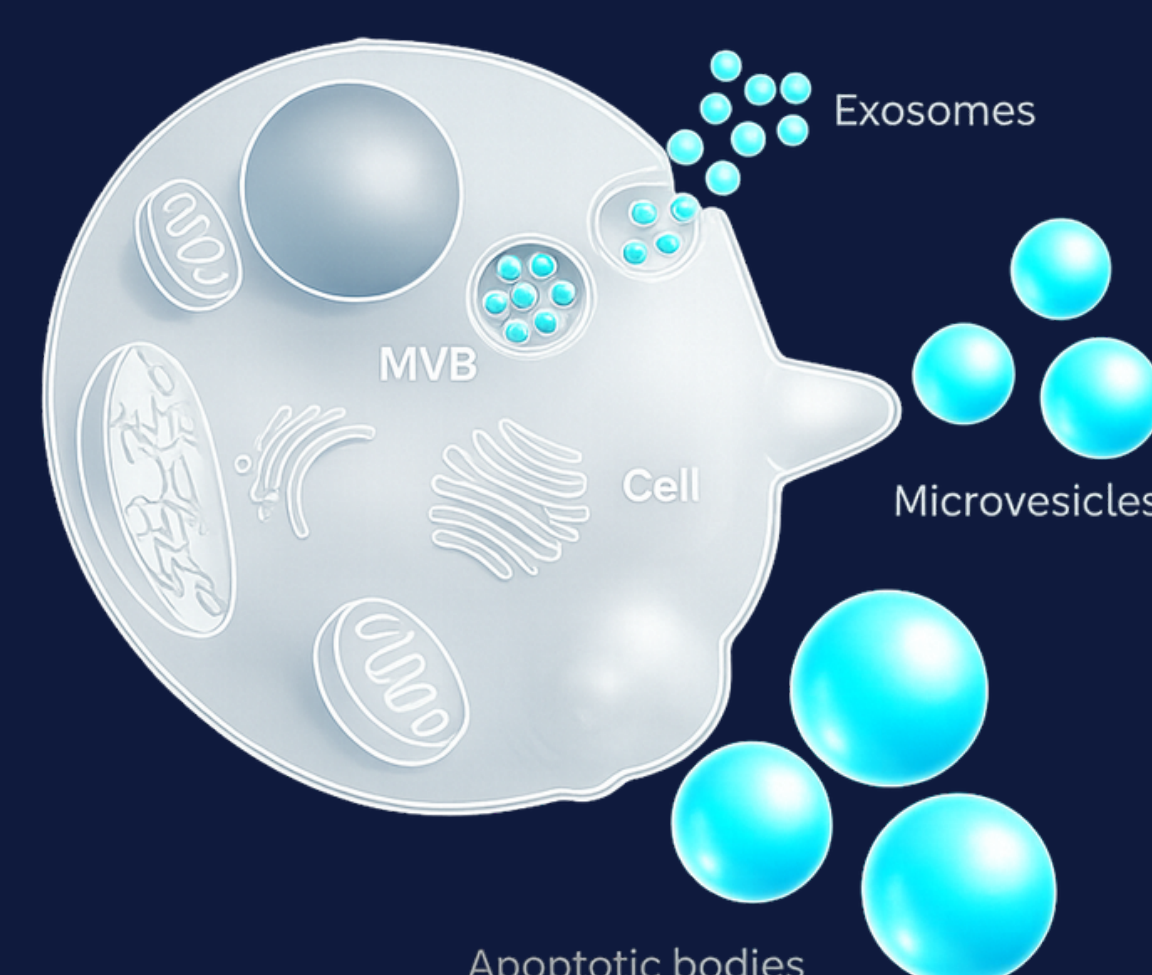
NKEV BIOLOGY

Natural Killer-Derived Extracellular Vesicles

NKEVs are a heterogeneous population of cell-derived vesicles released by Natural Killer cells:

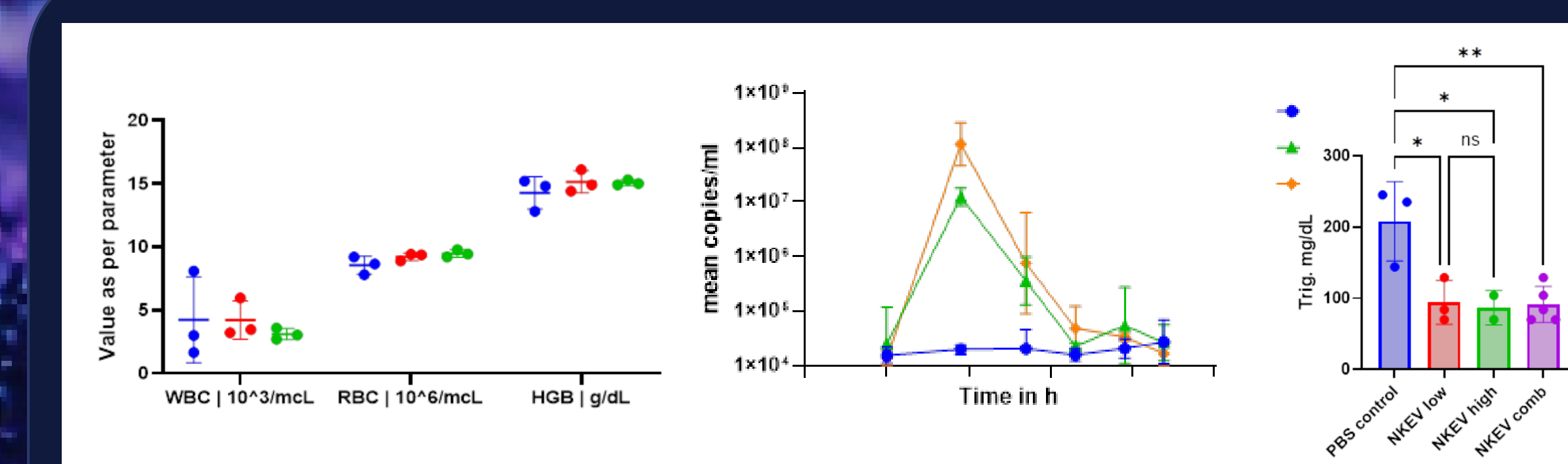
- Exosomes (small, ~30–150 nm)
- Microvesicles (med. ~150–1000 nm)
- Apoptotic bodies (large, >1 µm)

Each carries cytotoxic & immunomodulatory cargo (perforin, granzymes, miRNAs)."



EFFECTIVE

- Dose-Dependent Disease Elimination
- NK EV treatment dose-dependent suppression of disease cell proliferation vs. control. Significant reduction at 100 & 200 µg/mL doses (* p<0.05, ** p<0.01).
- Disease suppressed beyond no treatment and comparator control



TOXICITY

- **Left:** No change in WBC (blue control, red low dose, green high dose)
- **Center:** Clearance of detectable NKEV therapeutic
- **Right:** No increase (a decrease) in triglycerides

NKEV PLATFORM ADVANTAGES

- Off-the-shelf — No patient-specific manufacturing
- Cell-free biologic — Avoids cellular risks of CAR/NK cells
 - No HLA matching — Universal donor compatibility
- Stable & storable — Field-deployable cold-chain logistics
 - Repeat dosing — Tunable to disease severity
- Infusion compatible — Standard delivery — no special equipment

MECHANISM OF ACTION

NKEVs deliver cytotoxic + immunomodulatory cargo

1. BIND — NKEVs bind to target cells via surface receptors
2. DELIVER — Cargo release: perforin, granzymes, cytokines
3. ELIMINATE — Induce target cell apoptosis & immune response

100% SURVIVAL at 20× intended therapeutic dose
Well tolerated & No organ findings

NATIONAL SECURITY ALIGNMENT

DHA — Health Security & Force Readiness
VA — Medical Countermeasures & Veteran Care
DARPA — Advanced Biomanufacturing
BARDA — Distributed Healthcare Operations

SCAN TO CONNECT



Technology Overview



Partner With Us



Contact Bryan



Related Technology: Cancer Detection - AI



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CANCER
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