

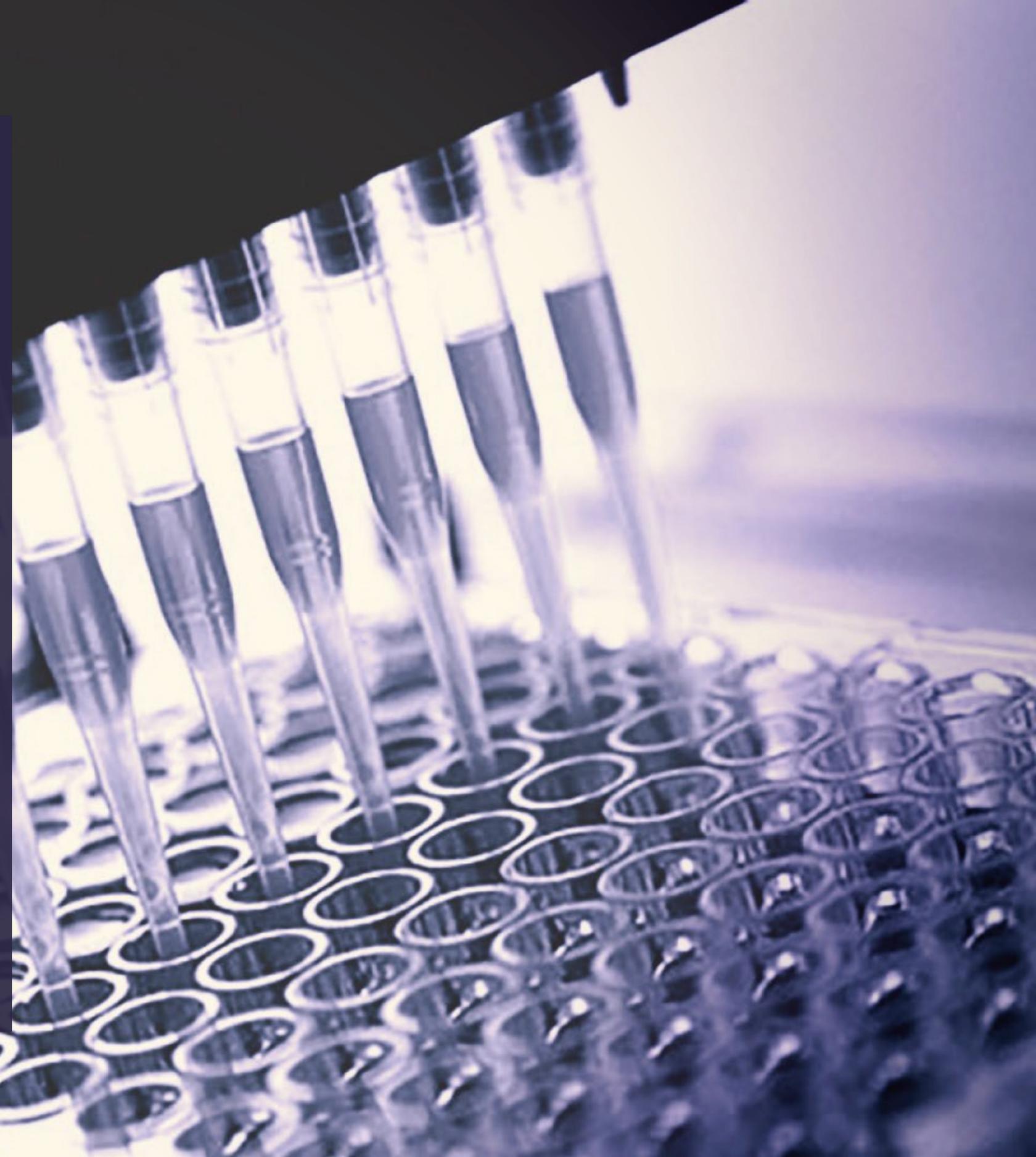


Introducing EXO-NET

**Next generation exosome isolation
technology**

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ANZSEV
10th November 2021

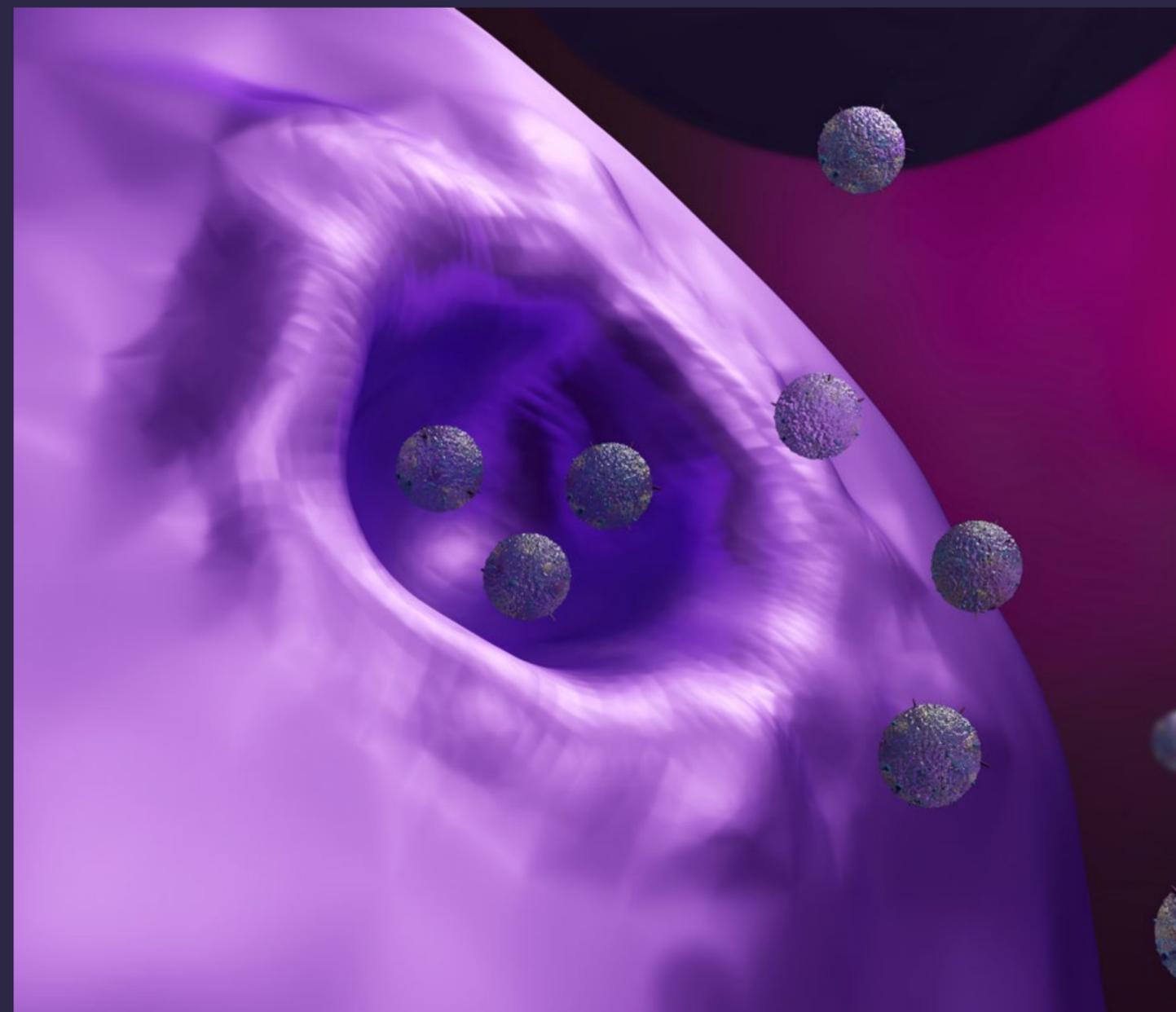


Sample preparation has limited exosome research

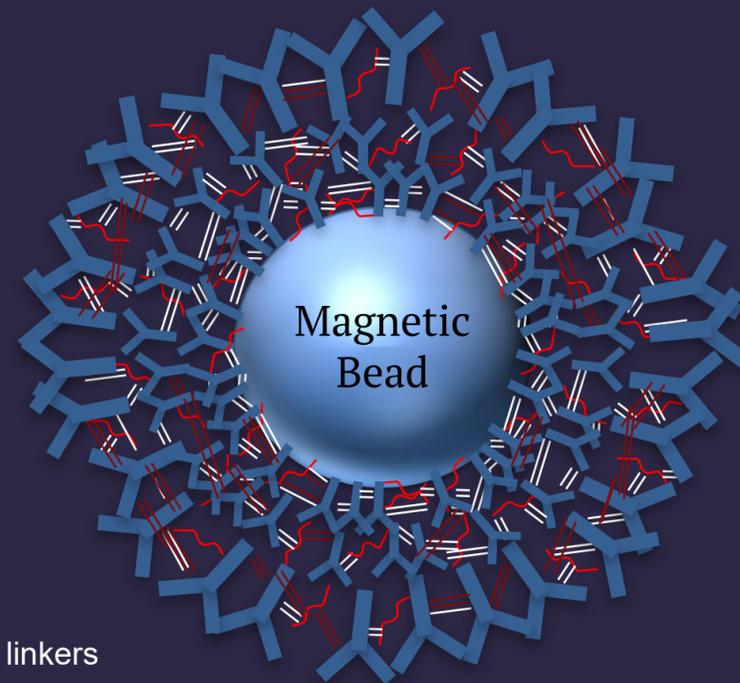
Limitations of existing exosome isolation methods:

- Low reproducibility
- Labour intensive
- Time consuming (hours)
- Low throughput (not automatable)
- Yield and purity variable - dependent upon either size or affinity
- Not scalable

Limits translational research and commercialisation of exosome diagnostics and therapeutics



Introducing EXO-NET[®]

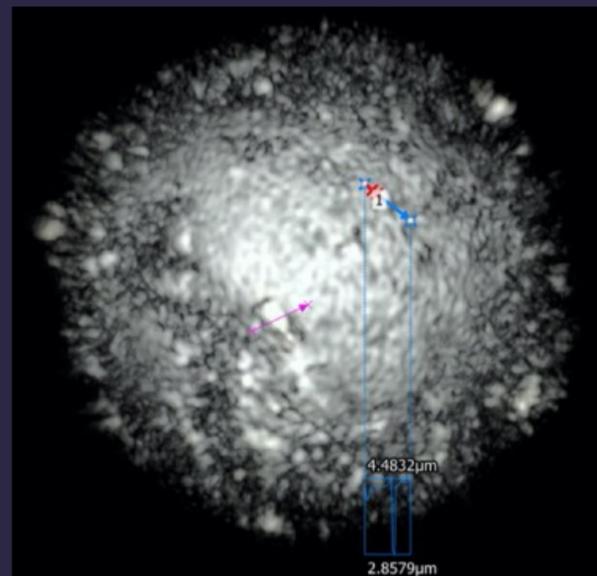


A molecular NET (matrix) comprising eight antibodies (to common external exosome-associated proteins) with spacers and linkers that form a multilayered complex matrix with defined porosity to exclude larger particles.

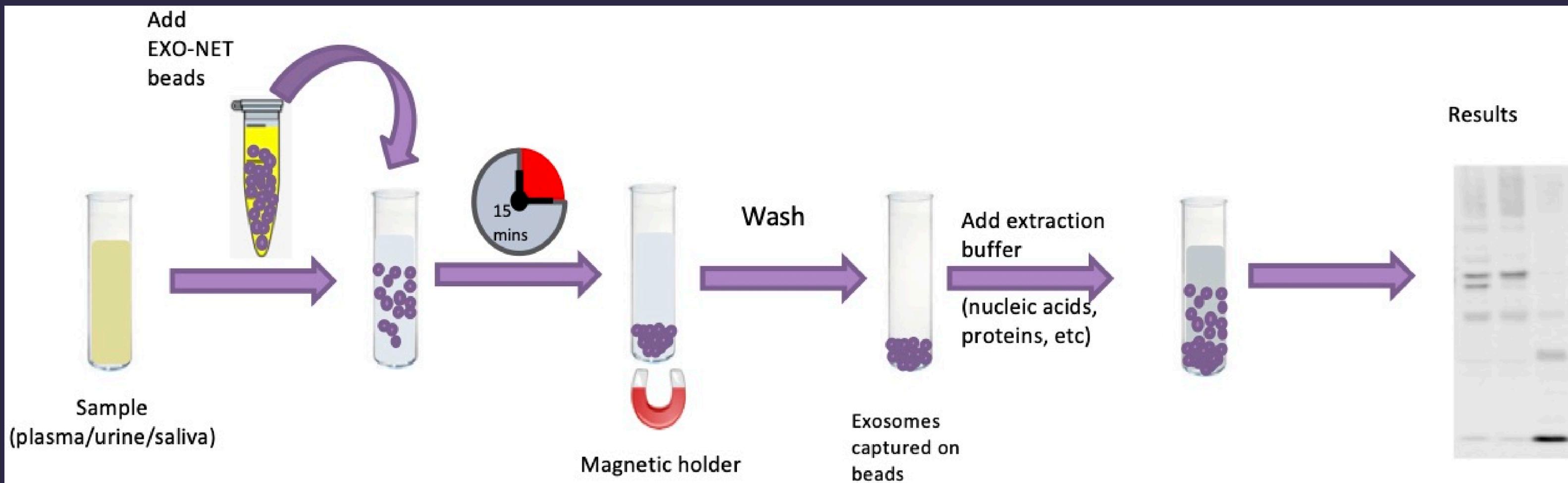
The EXO-NET matrix is coated onto magnetic beads for ease of use in the laboratory.

EXO-NET:

- Rapid, pure and specific capture of exosomes from any liquid sample (plasma, urine, saliva, culture medium)
- Highly scalable
- Compatible with downstream molecular analyses
- Ideal for high volume clinical laboratory applications.



EXO-NET simplifies exosome capture



EXO-NET simplifies exosome capture

Typical research example – Compared to column-based exosome isolation solutions (exclusion or affinity chromatography):

96 columns

+

96 tip changes + multiple fraction collectors or centrifuges



EXO-NET:

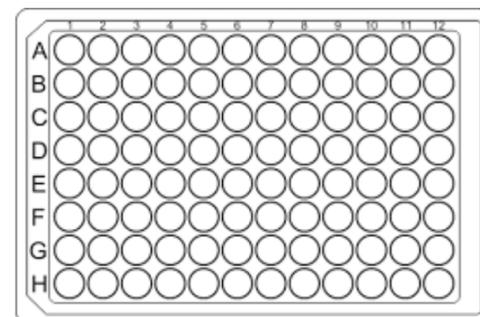
1 microtiter plate

+

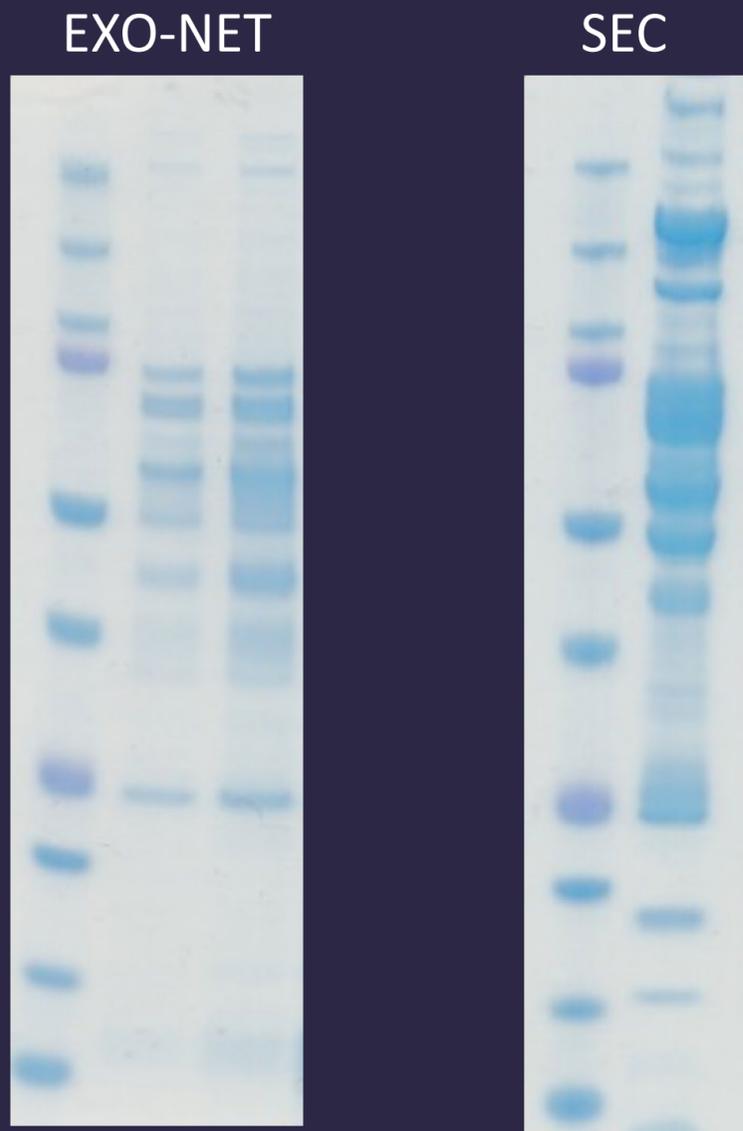
8 -12 tip changes

+

1 magnetic plate



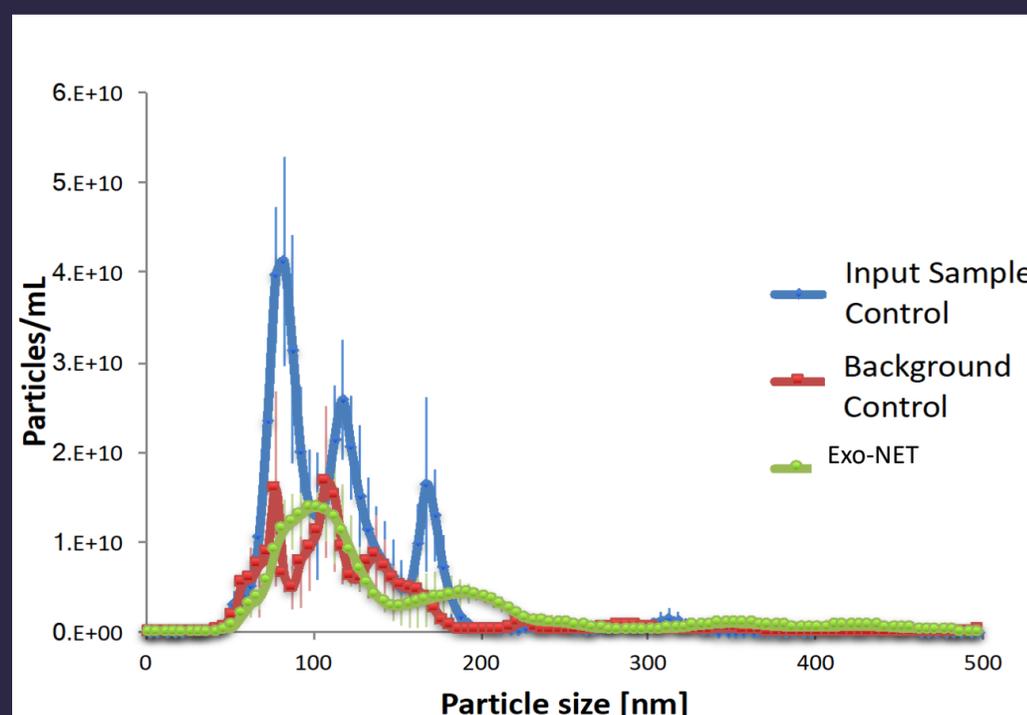
EXO-NET – superior purity



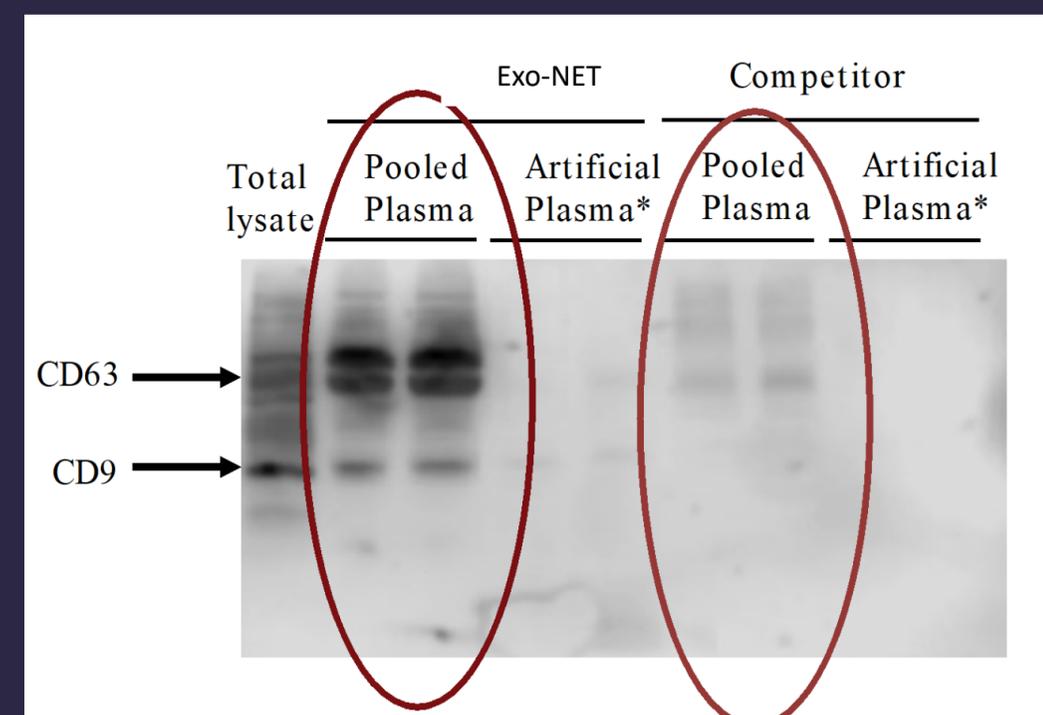
Plasma exosome preparations are free of albumin and other common serum protein contaminants, unlike size exclusion chromatography (SEC)

EXO-NET - Superior speed and yield

EXO-NET used for isolation of circulating **tumor-derived exosomes** for rapid downstream analysis

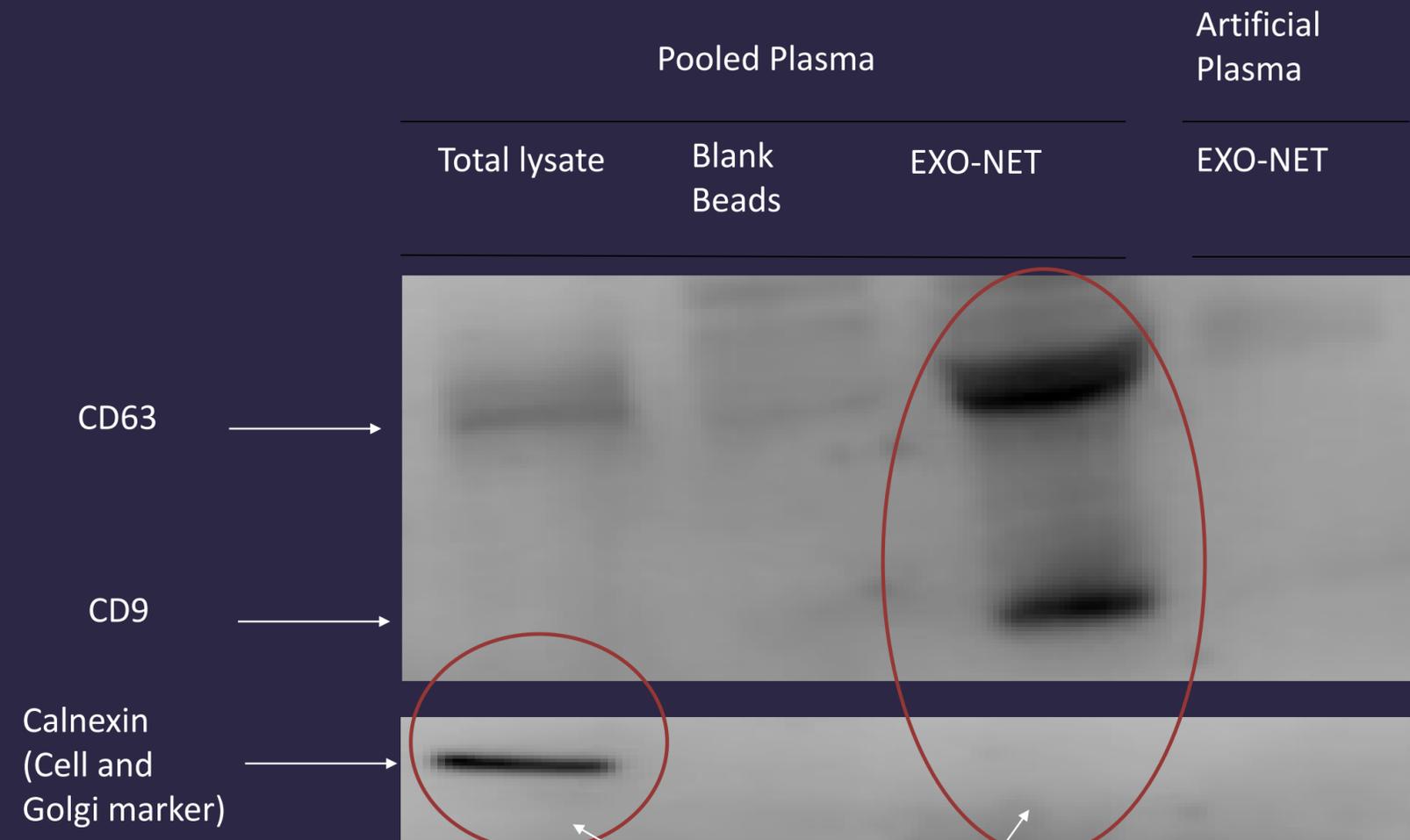


>85% breast cancer-derived exosomes recovered in 15 min



Much higher yield and faster (15 mins v 16 hours)

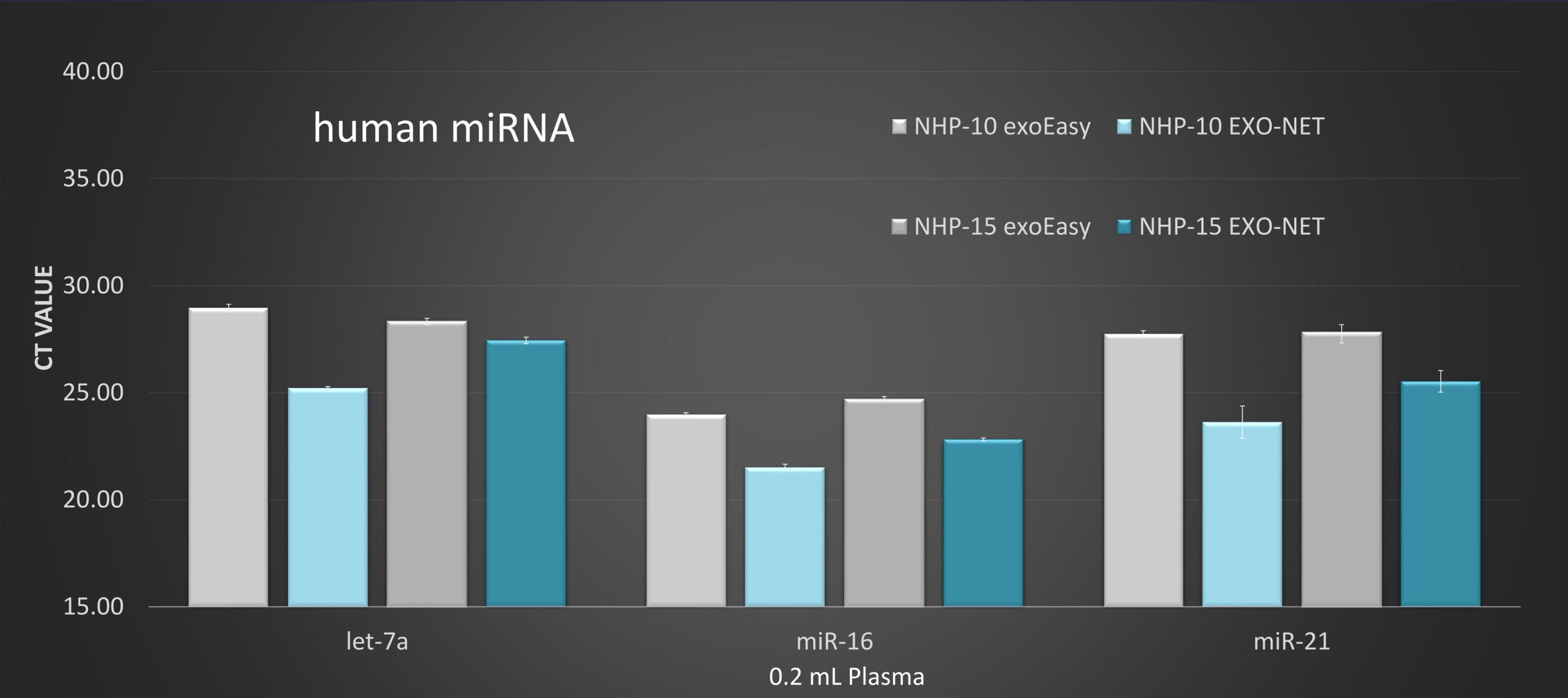
EXO-NET exosome isolation is specific



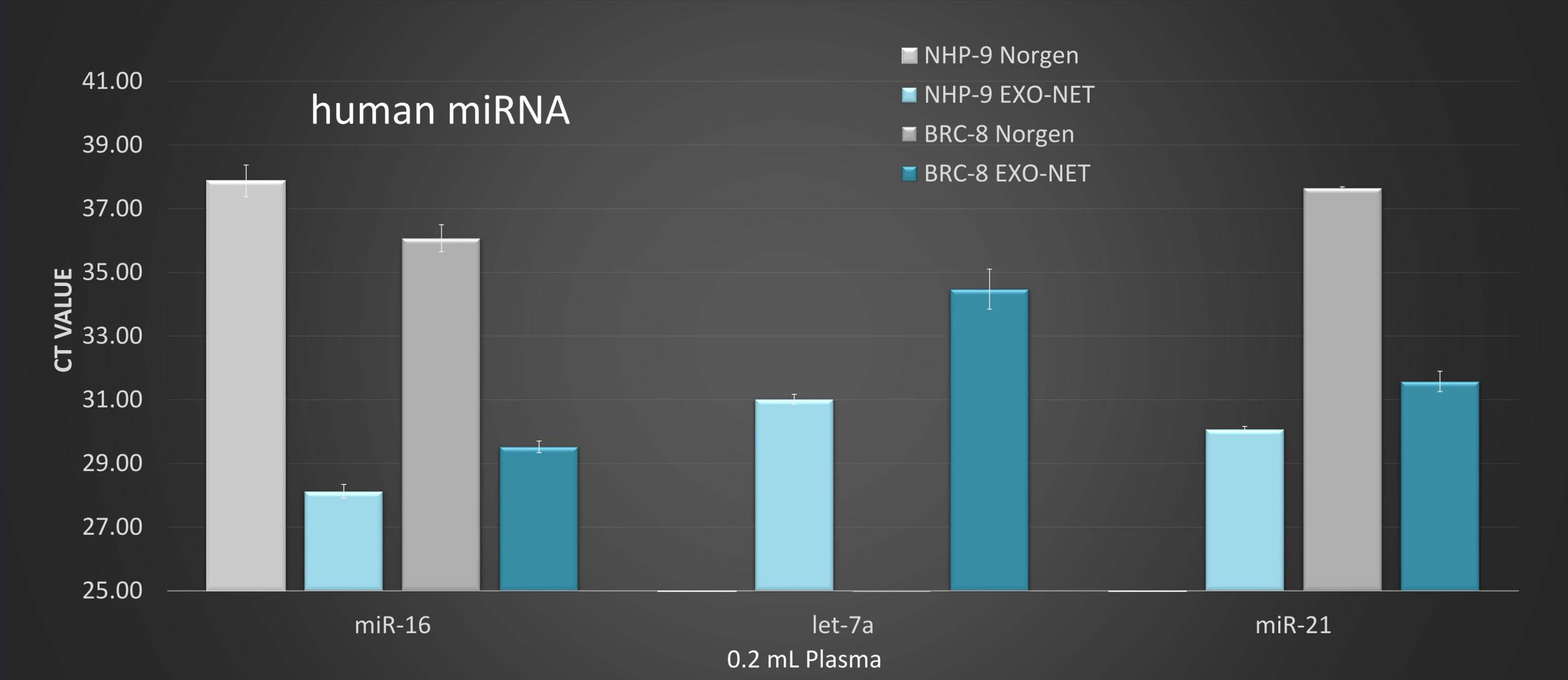
Demonstration that EXO-NETs can capture specific cell-derived exosomes and not other cell-derived vesicles

EXO-NET Competitor Comparison Testing

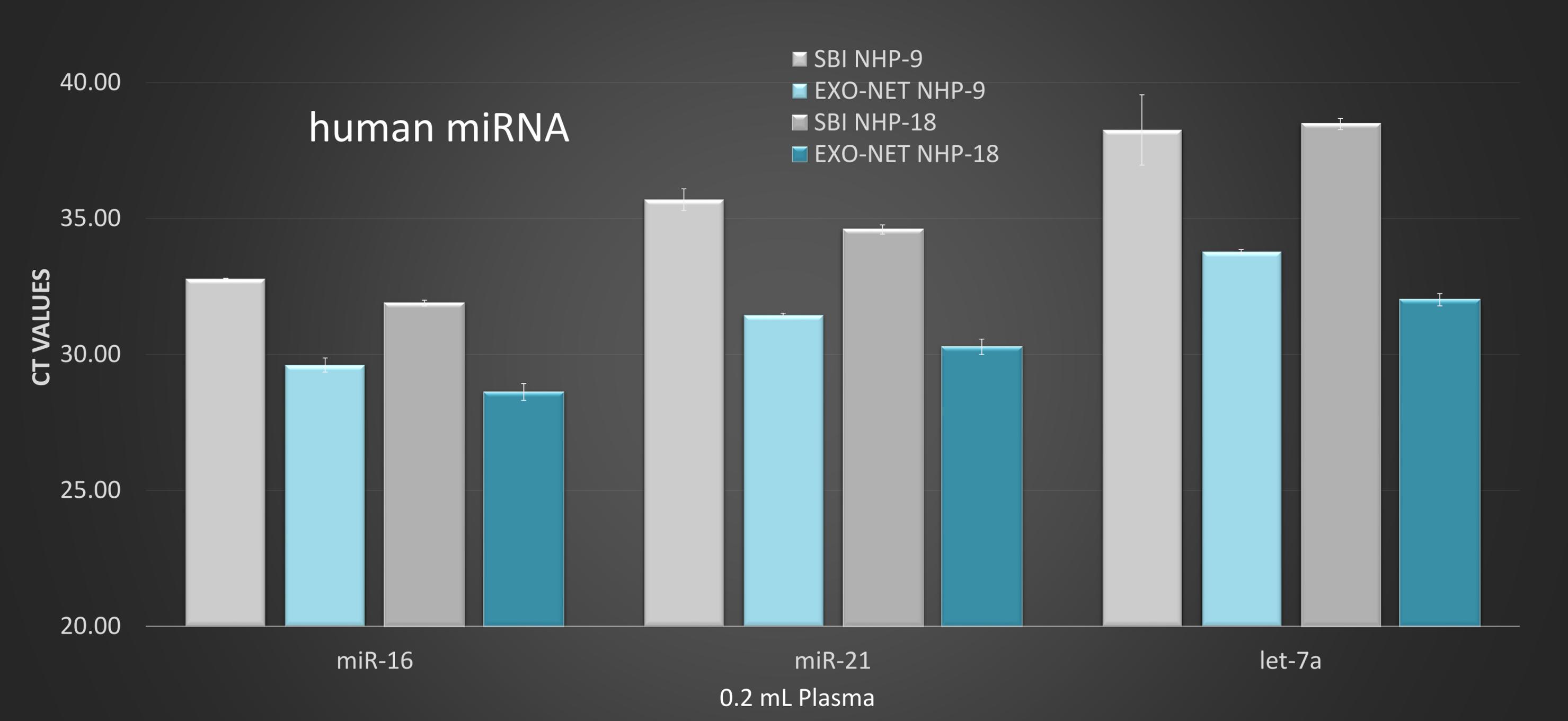
exoEasy vs EXO-NET



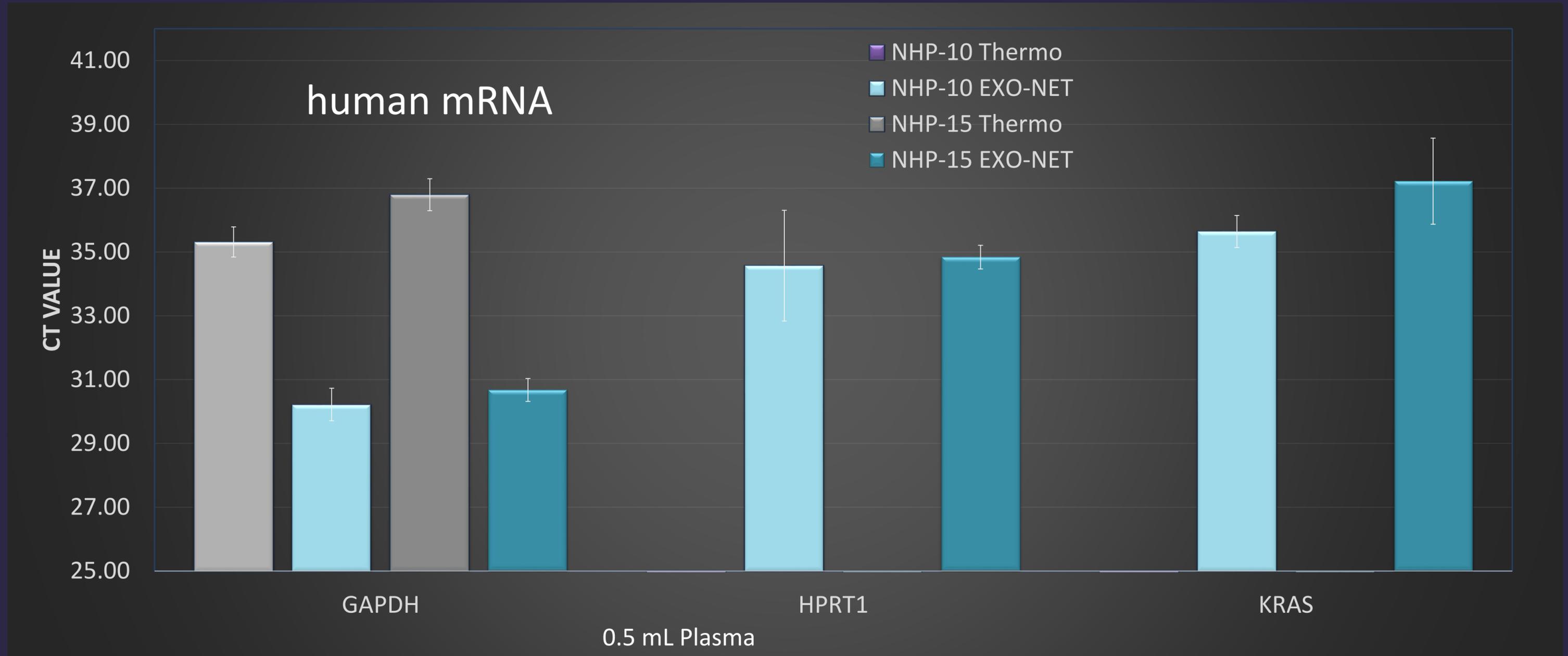
Norgen vs EXO-NET



Exo-Quick vs EXO-NET



Thermo Fisher vs EXO-NET

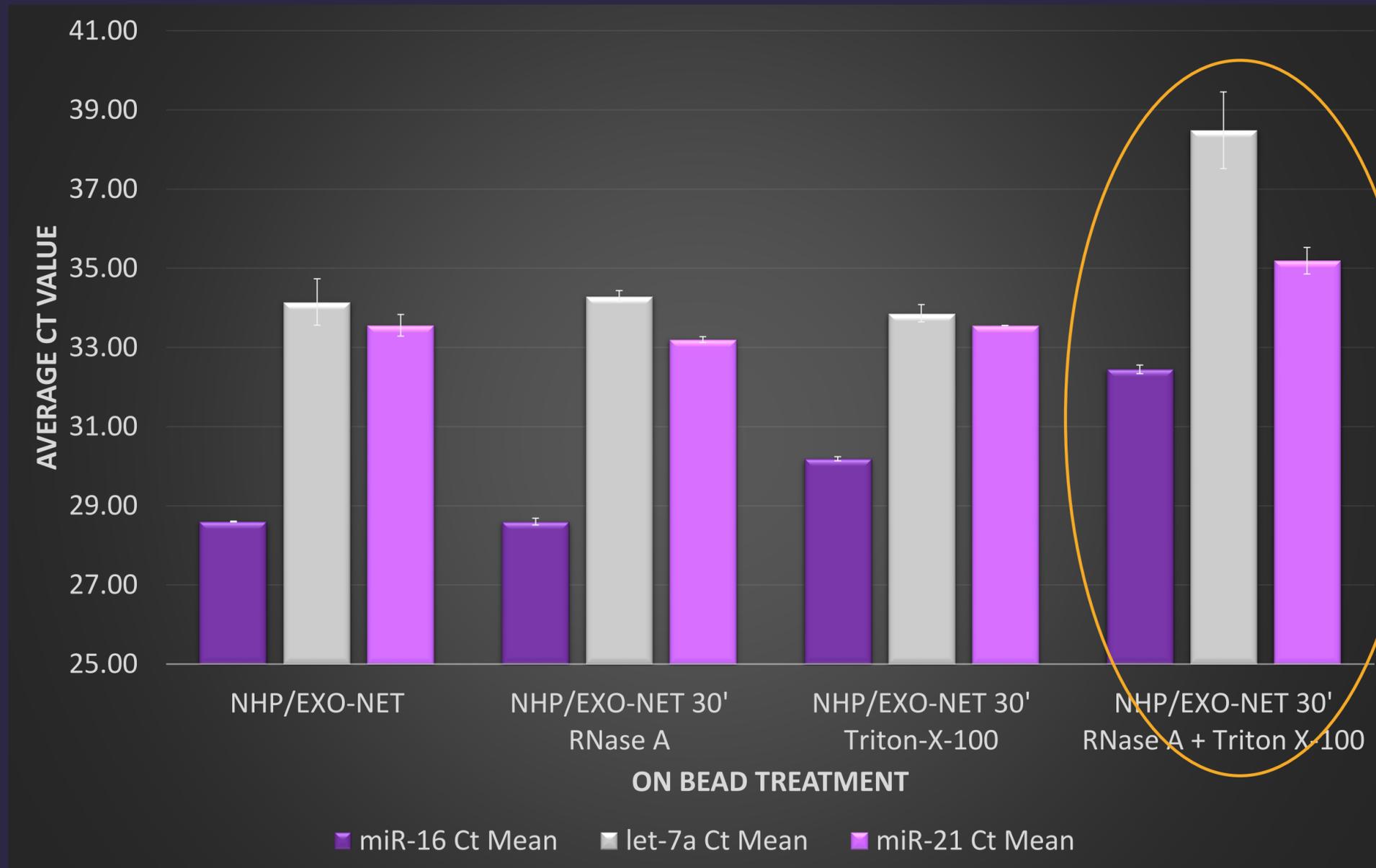


EXO-NET Competitor Comparison Testing

CONCLUSION

**EXO-NET is either equivalent to or out-performs
all competitor products tested.
In addition it is faster, and scalable for high
throughput applications**

EXO-NET captures intact vesicles



Exosomes on EXO-NET beads were incubated in the presence of RNaseA, Triton X-100 or both combined, and assayed by RT-PCR for miRNAs.

miRNA yields were only reduced by the combination of RNaseA and detergent.

CONCLUSION: EXO-NET captures intact exosome vesicles.

Conclusions

- **Simple, rapid procedure for intact exosome isolation**, limited hands-on time and incubation time of 15 minutes.
- **Protein and nucleic acid extraction possible from the same sample.**
- **Recovery of miRNA and mRNA is equivalent or substantially improved** compared to other commercial products.
- **Compatible with high through-put instrumentation.**
- **Uniquely flexible permitting isolation of a broad population of exosomes (EXO-NET) and customization for highly specific and selective isolation of sub-populations.**

EXO-NET[®] advantages

- Reproducible – Intra and Inter-assay
- Purity – Free from contaminating non-exosome proteins
- Rapid capture – 15-30 minutes
- Versatile
 - Plasma
 - Urine
 - Saliva
 - Cell culture supernatant
- Optimal solution for very low volume and rare samples
- Downstream analysis can be performed on the same sample
 - Protein
 - Nucleic Acid
 - Lipids
 - Immunoassay
 - Spectrophotometric analysis
- Scalable

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