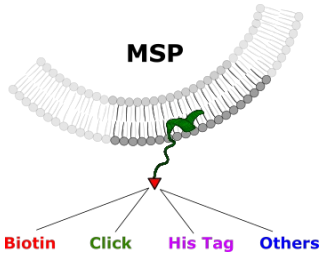
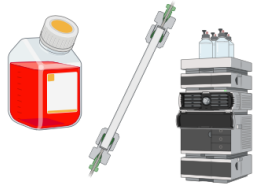
Evolving reversible iMmunocapture by membrane sensing peptides: towARds scalable extracellular VEsicLes isolation

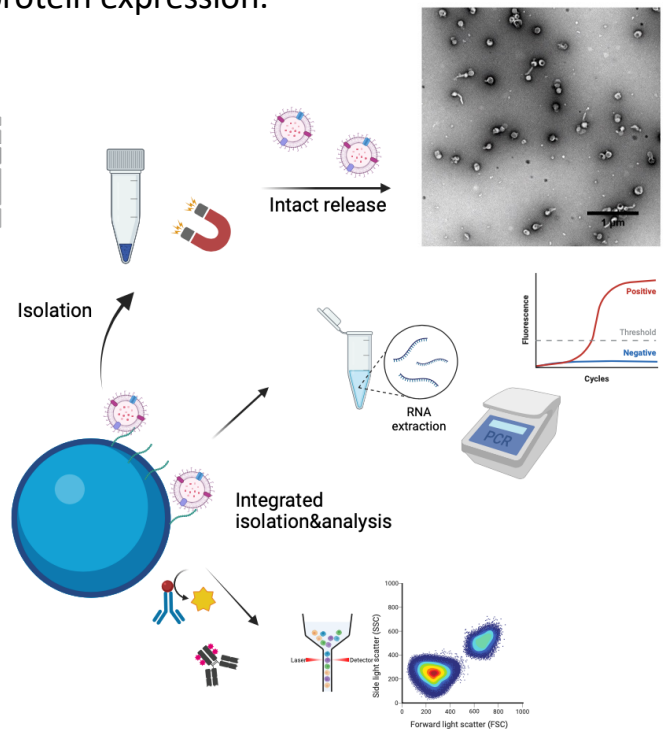
Extracellular vesicles (EV) are submicron membrane vesicles released by most cells with a fundamental role in **therapy and diagnostics**. However, the fulfilment of the EV promise is hampered by severe limitations in their isolation, characterization and manufacturing.

MARVEL targeted a **paradigm shift from antibodies to peptides as an alternative class of affinity ligands for EV capturing** by introducing membrane-sensing peptides (MSP) as novel ligands for the capturing of small EV, unbiased by differential surface protein expression.





Large scale isolation by tangential flow filtration (TFF)



MARVEL demonstrated (TRL 6):

- The peptide-based workflow is highly effective in isolating and enriching EVs from conditioned medium, urine, plasma and serum with minimal carry over of contaminants
- Peptide conjugated beads enable the release of structurally intact EVs with no decrease in efficacy.
- The peptide-based workflow can be directly applied using various analytic platforms

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