Studying cellular deliveries

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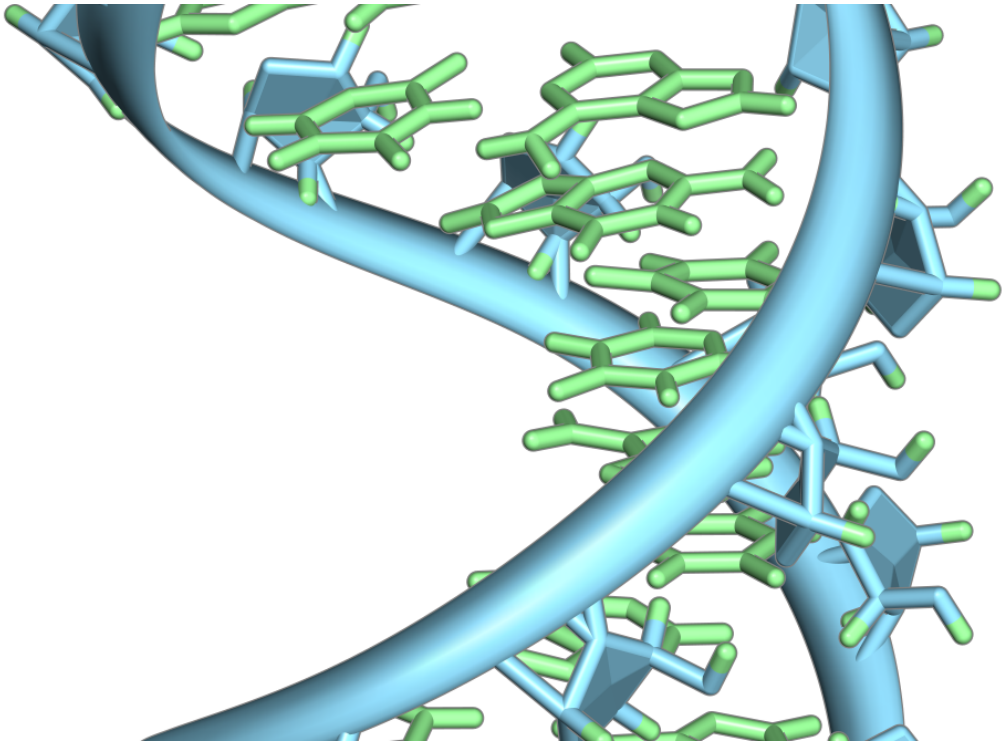

A hairpin loop from a pre-mRNA. Highlighted are the nucleobases (green) and the ribose-phosphate backbone (blue). Note that this is a single strand of RNA that folds back upon itself. Credit: Vossman/ Wikipedia

Many cells, including cancer cells, are known to secrete short RNAs in tiny vesicles, which then move inside other cells—potentially a form of cell-to-cell communication.

In an article recently published in *Cell Reports*, James G. Patton, Ph.D.,

and colleagues studied how colon cancer cells can secrete long RNAs in carefully regulated ways.

The authors had previously demonstrated how short, secreted RNAs can help other cancer cells grow and spread. In their latest work, they show that longer RNAs that either do or do not code for proteins can be secreted by cancer cells in specific ways.

In cancer cells with mutations in the KRAS gene, many of the secreted vesicles delivered mRNA coding for a protein called Rab13 to new cells. Rab13 may play a role in regulating what RNAs are exported in vesicles but is also commonly found in cells that resist radiation therapy, and therefore may be involved in helping cancer cells be more aggressive.

Finally, the authors used a CRISPR/Cas9 system to track RNA as it is secreted and delivered to new cells.

More information: Scott A. Hinger et al. Diverse Long RNAs Are Differentially Sorted into Extracellular Vesicles Secreted by Colorectal Cancer Cells, *Cell Reports* (2018). DOI: 10.1016/j.celrep.2018.09.054

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