Molecular Biology of the Cell, Sixth Edition
Chapter 20: Cancer
Journal Club

Paper

Zomer A, Maynard C, Verweij FJ et al. (2015) *In vivo* imaging reveals extracellular vesicle-mediated phenocopying of metastatic behavior. *Cell* 161, 1046–1057.

Readings from *Molecular Biology of the Cell* (pp. 1101–1102, 1119–1120)

- Cancer Cells Must Survive and Proliferate in a Foreign Environment
- The Changes in Tumor Cells that Lead to Metastasis Are Still Largely a Mystery

Relevant Techniques

- Fluorescence microscopy (pp. 536–537, 542–546)
- Transgenic organism/Cre recombinase (pp. 495–497)
- RT-PCR (pp. 502–503)
- Western blot (pp. 452–455)

Questions

1. What was known about extracellular vesicles (EVs) prior to this publication?

2. What are some of the main hurdles that the authors describe for using living animals to study the effects of cancer-cell-derived EVs?

3. What is the primary technique that the authors use to monitor the uptake of EVs? Explain how this works.

4. What were the main questions that the authors were trying to answer in this paper?

5. What differences did they find in the ability of different types of cells to release and take up EVs?

6. How did the researchers test for the possibility that the observed transfer of materials between the two types of marked cells is due to whole-cell fusions instead of being caused by the transfer of EVs? What were the results?

7. What effect did the authors see on the behavior of the cells that took up EVs from malignant cells? Why is this an important finding?

8. What is one additional question that you have after reading this paper? Design an experiment that could be used to address that question.