

# Cell-cell interaction

Cell-cell interaction refers to the direct interactions between [cell surfaces](#) that play a crucial role in the development and function of multicellular organisms. These interactions allow cells to communicate with each other in response to changes in their [microenvironment](#). This ability to send and receive [signals](#) is essential for the survival of the cell. Interactions between cells can be stable such as those made through cell junctions. These junctions are involved in the communication and organization of cells within a particular tissue. Others are transient or temporary such as those between cells of the immune system or the interactions involved in tissue inflammation. These types of intercellular interactions are distinguished from other types such as those between cells and the extracellular matrix

In cancer, interactions between cancer cells and stromal cells play a major role in nearly every step of carcinogenesis. Thus, the ability to record cell-cell interactions would facilitate mechanistic delineation of the role of the cancer microenvironment. He

Tang et al. described GFP-based Touching Nexus (G-baToN) which relies upon nanobody-directed fluorescent protein transfer to enable sensitive and specific labeling of cells after cell-cell interactions. G-baToN is a generalizable system that enables physical contact-based labeling between various human and mouse cell types, including endothelial cell-pericyte, neuron-astrocyte, and diverse cancer-stromal cell pairs. A suite of orthogonal baToN tools enables reciprocal cell-cell labeling, interaction-dependent cargo transfer, and the identification of higher-order cell-cell interactions across a wide range of cell types. The ability to track physically interacting cells with these simple and sensitive systems will greatly accelerate our understanding of the outputs of cell-cell interactions in cancer as well as across many biological processes <sup>1)</sup>.

<sup>1)</sup>

Tang R, Murray CW, Linde IL, Kramer NJ, Lyu Z, Tsai MK, Chen LC, Cai H, Gitler AD, Engleman E, Lee W, Winslow MM. A versatile system to record cell-cell interactions. *Elife*. 2020 Oct 7;9:e61080. doi: 10.7554/eLife.61080. Epub ahead of print. PMID: 33025906.

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