



CHEMISTRY WITH CELLS: A NEW INNOVATIVE APPROACH FOR MANIPULATING CELL-CELL INTERACTIONS

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The development of innovative strategies for cell membrane engineering is of prime interest to explore and manipulate cell-cell interactions. Herein, we report on innovative approach to form and break bonds between cells, using cells as chemical reactants. Artificial markers can be introduced at the cell membrane via biorthogonal chemistry, allowing the cells to assemble with cell partners bearing complementary markers through non-covalent click chemistry. With our recent design of an enzyme-responsive marker, we were able to conditionally trigger bond cleavage between cells and investigate cell attachment/detachment associated biological processes (Fig. 1A). Herein, we report on markers that allow cells to form and break bonds only with the use of covalent and non-covalent click chemistry while the detachment of the cells lead to the formation of new communication (Fig. 1B). Thus, our study shows that the ready-to-use complementary artificial surface markers are valuable tools for controlling the formation and the breaking of bonds between cells, offering an easy way to investigate biological processes associated with cell proximity.

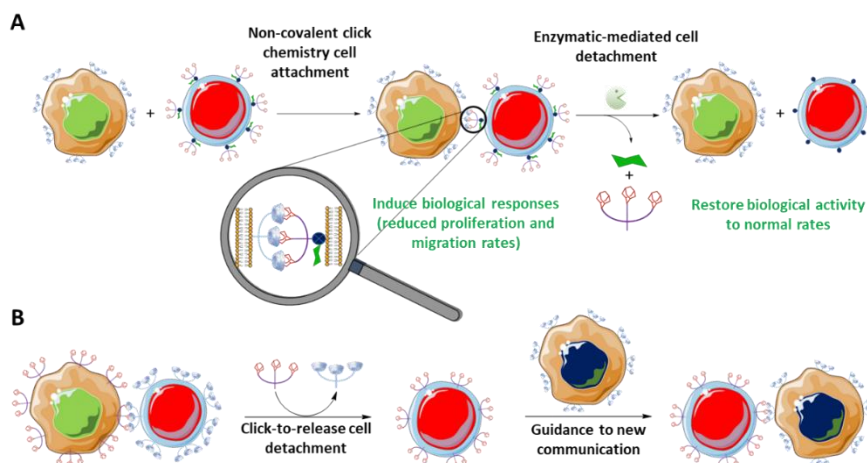


Figure 1A. Previous work of enzyme-mediated cell detachment **B.** Current work of click-to-release cell detachment and guidance to new communication

References

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