

Cell Responsive Biomaterials

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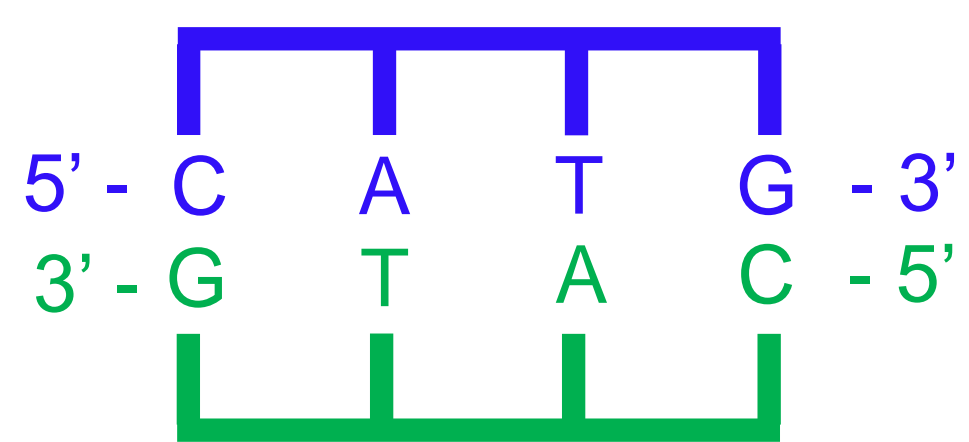


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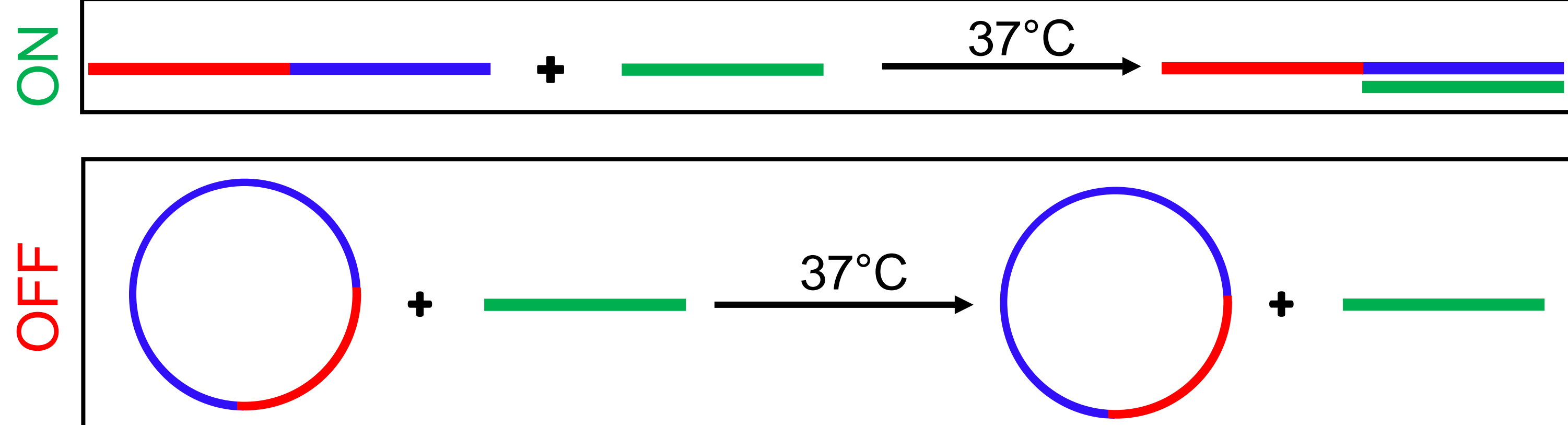
Design Biomaterials with Cell-Type Specific Responses

Watson & Crick Base Pairing

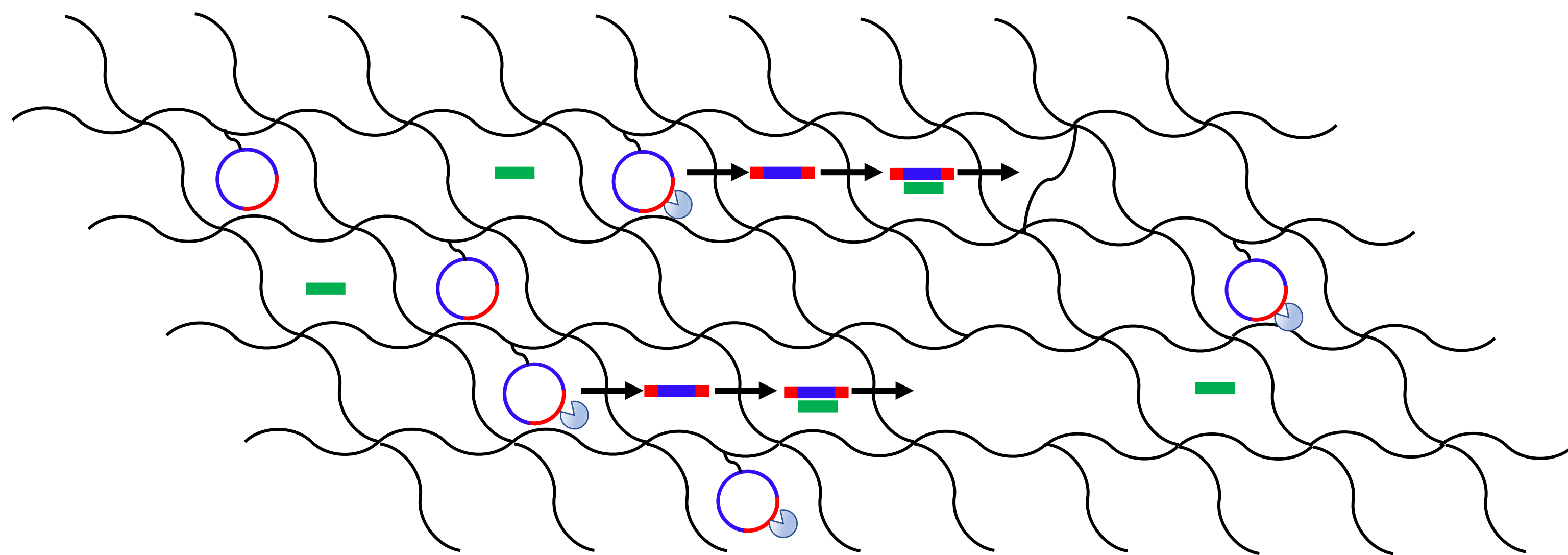


Legend
Peptide
Forward-Nucleic Acid
Reverse-Nucleic Acid
 = Protease

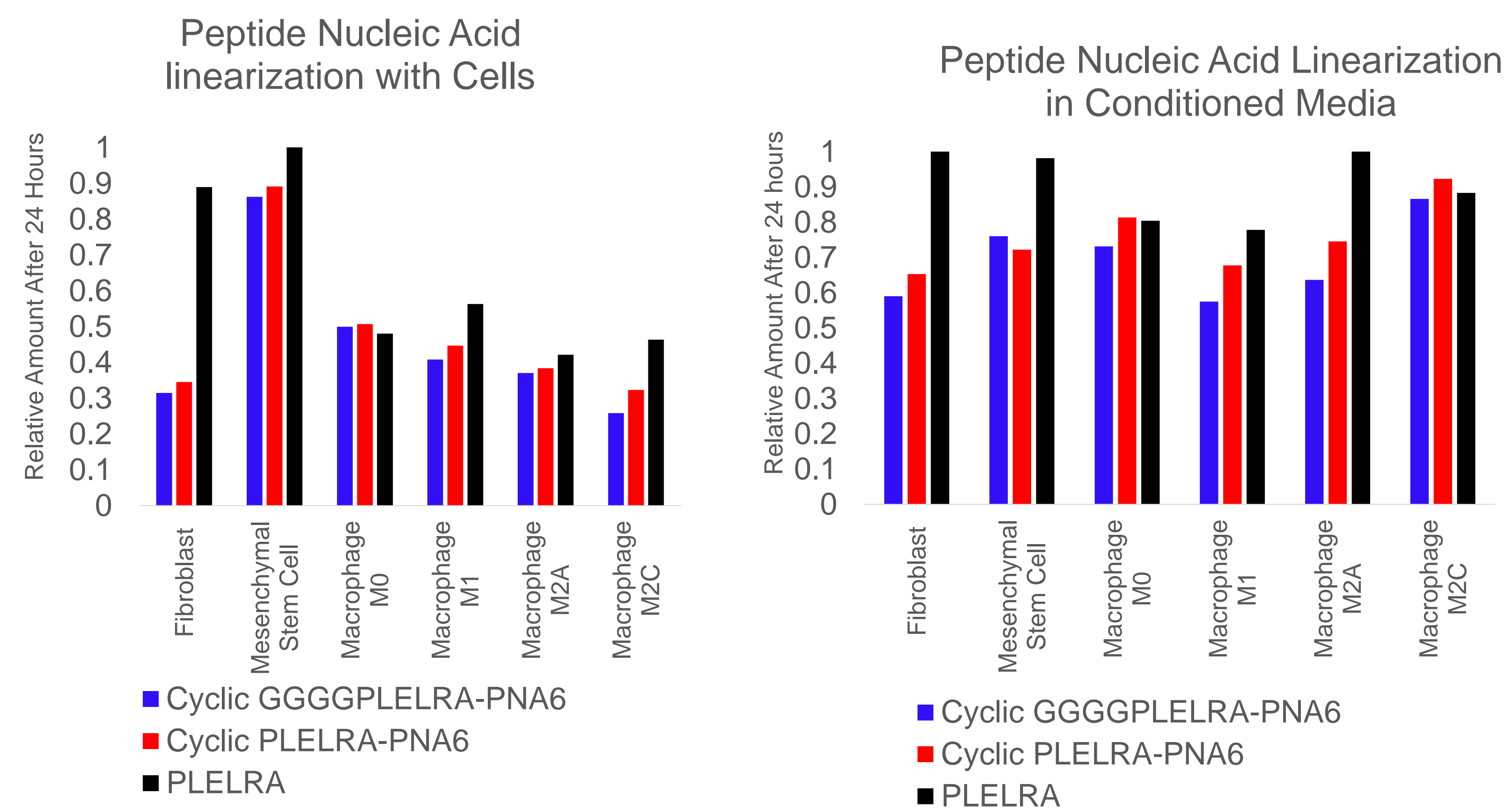
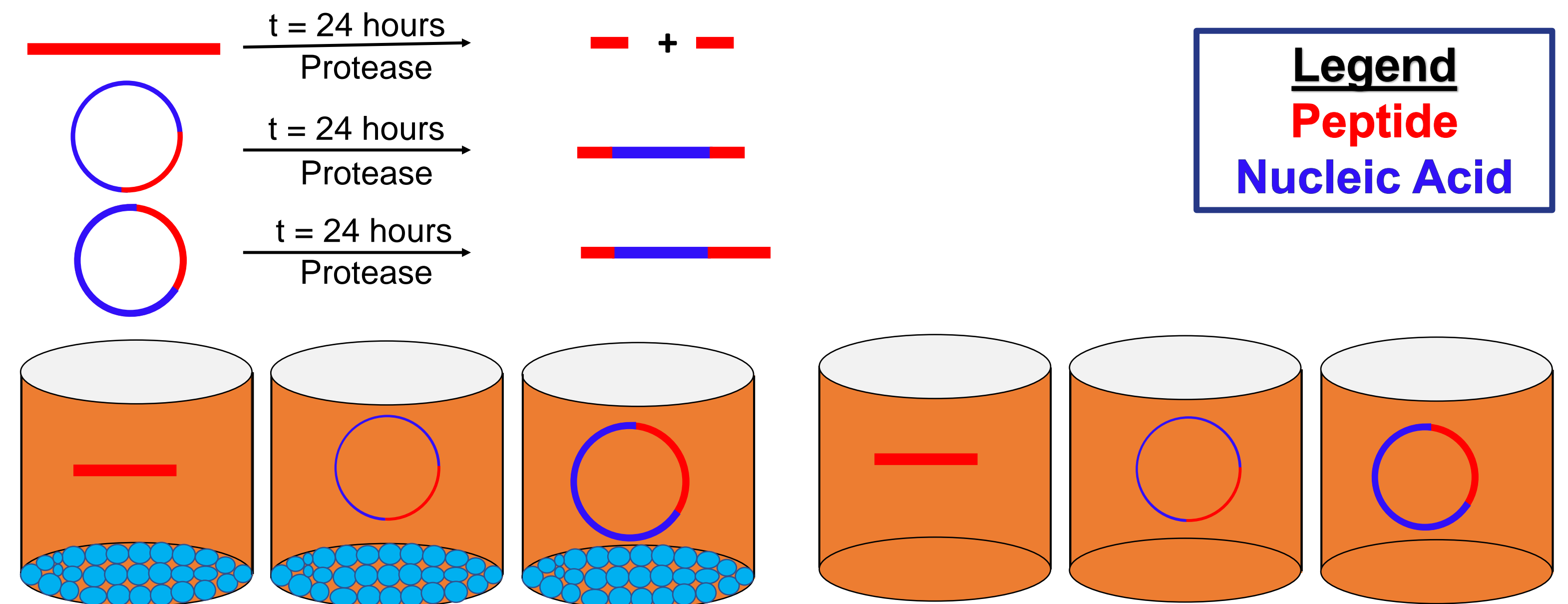
On/Off Signaling Mechanism Using Nucleic Acid-Peptide Conjugate



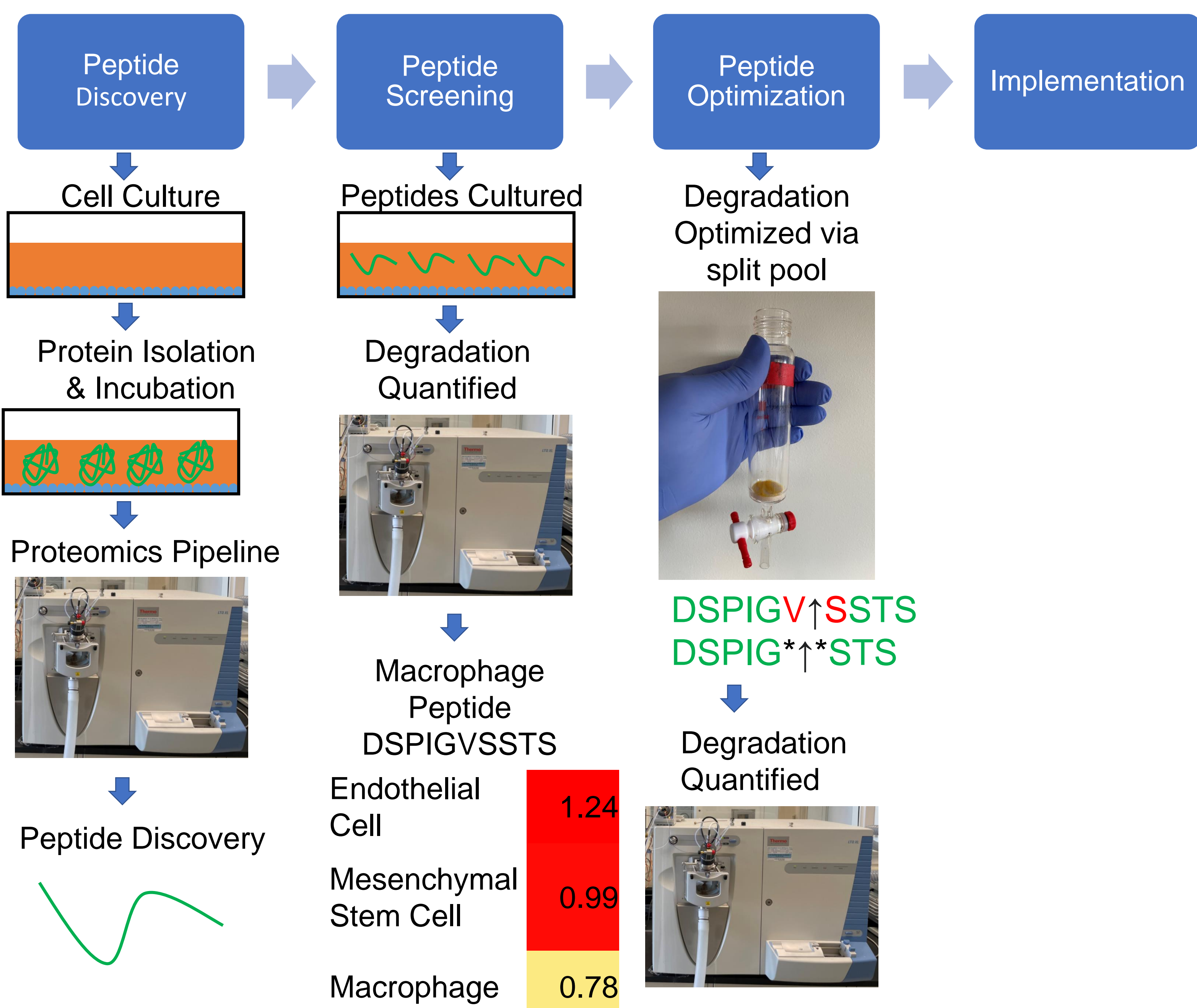
Example: Turning a Peptide Cleavage Event into a Mechanical Response



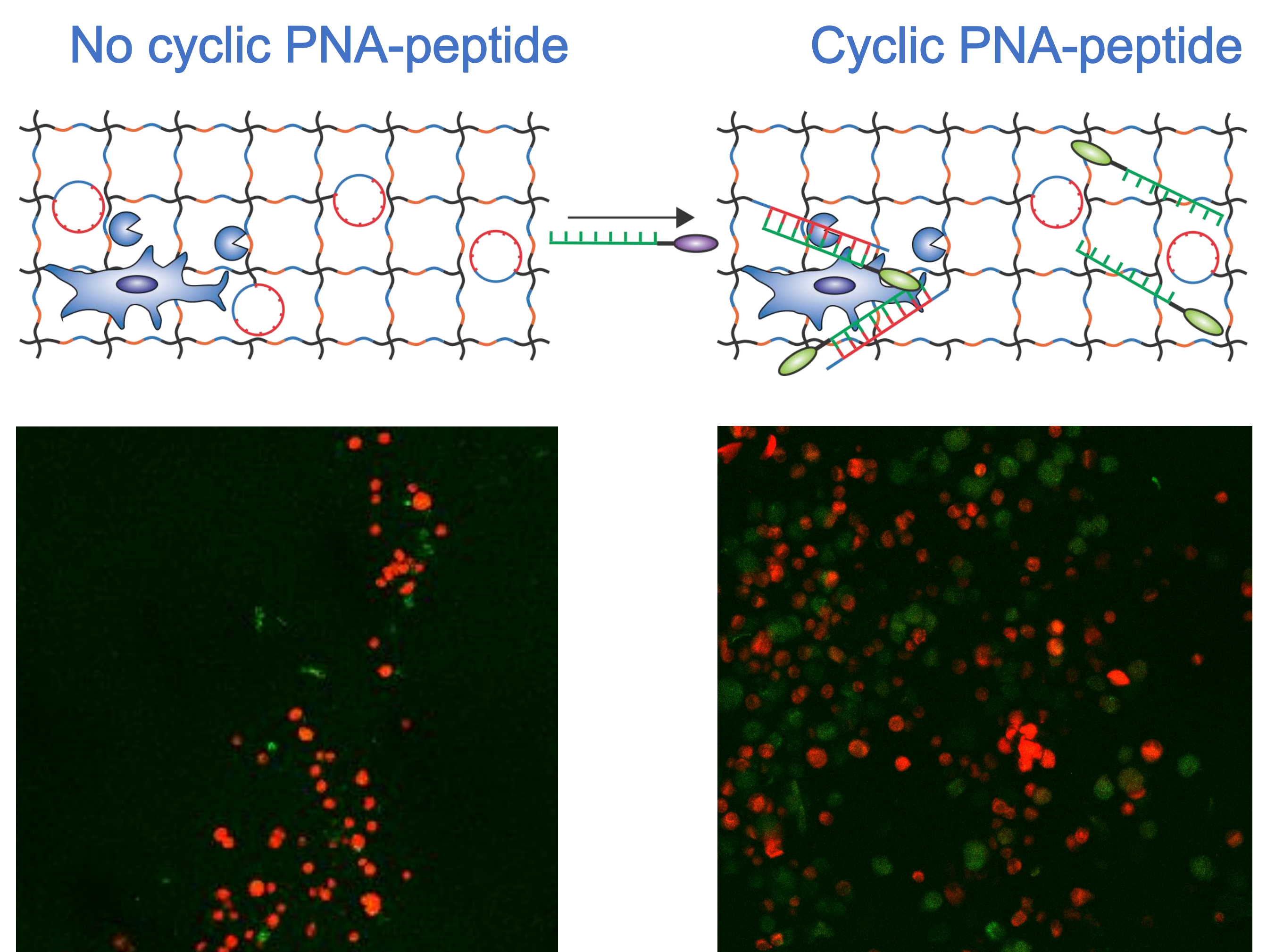
Using Cell-Secreted Proteases to Trigger a Response



Identifying Cell-Specific Peptides



Implementation: Turning a Protease Cleavage Event into a Response



The reverse strand containing a green fluorophore was added to both wells. Green staining was observed in the presence of cyclic nucleic acid – peptide conjugates (right) located either outside of cells, or where cells were previously located.