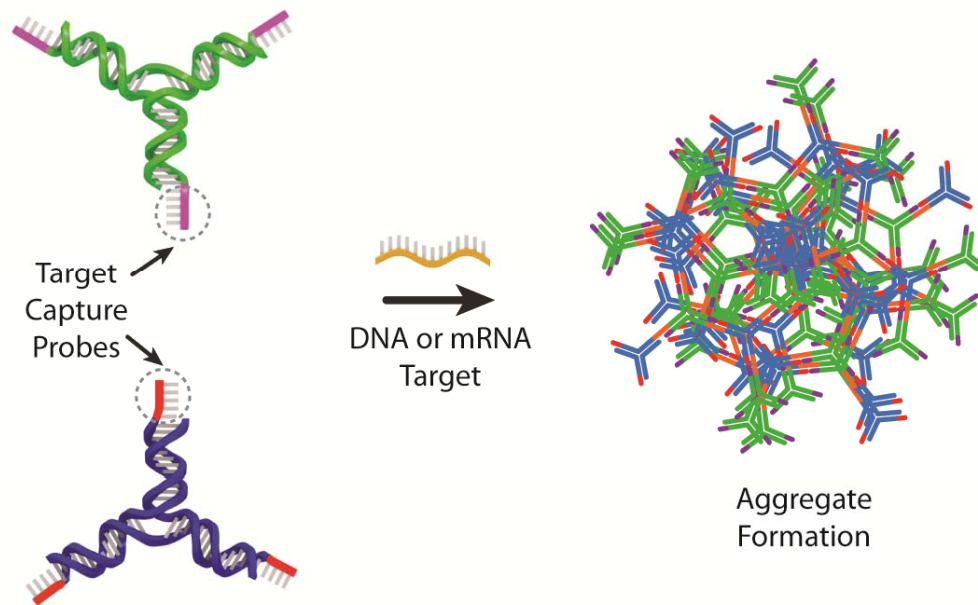
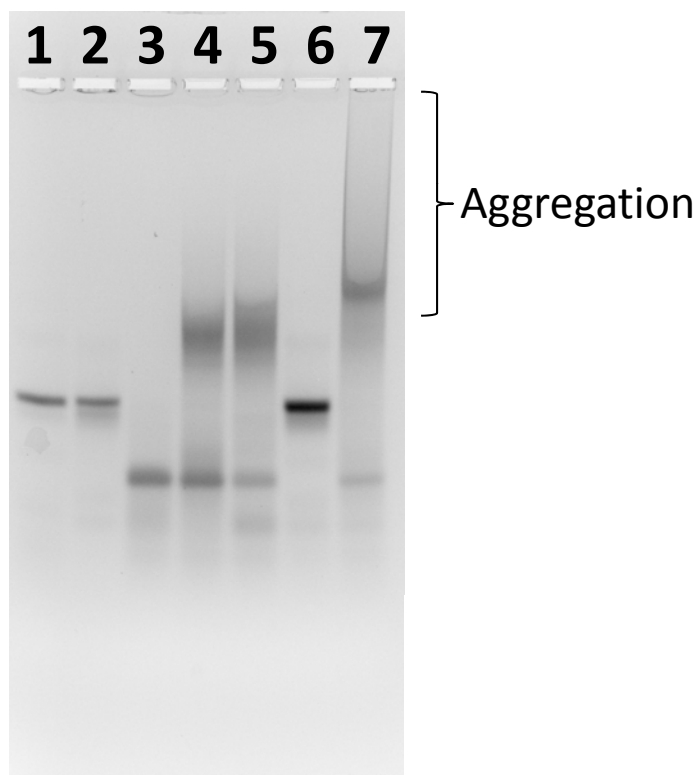


In the presence of target pathogen DNA or RNA, the branched DNA nanostructures link together to form aggregates.



Gel electrophoresis demonstrates that DNA nanostructures recognize and bind to pathogen DNA as expected.



Lane	Sample	Schematic representation
1	YDNA 1	
2	YDNA 2	
3	Target	
4	YDNA 1 + Target	
5	YDNA 1 + Target	
6	YDNA 1 + YDNA 2	
7	YDNA 1 + YDNA 2 + Target (aggregate)	

The long smear in Lane 7 indicates aggregation, which occurs only in the presence of target pathogen DNA sequence. These aggregates can be detected by electrochemical sensor, which will be implemented in Objective 2.