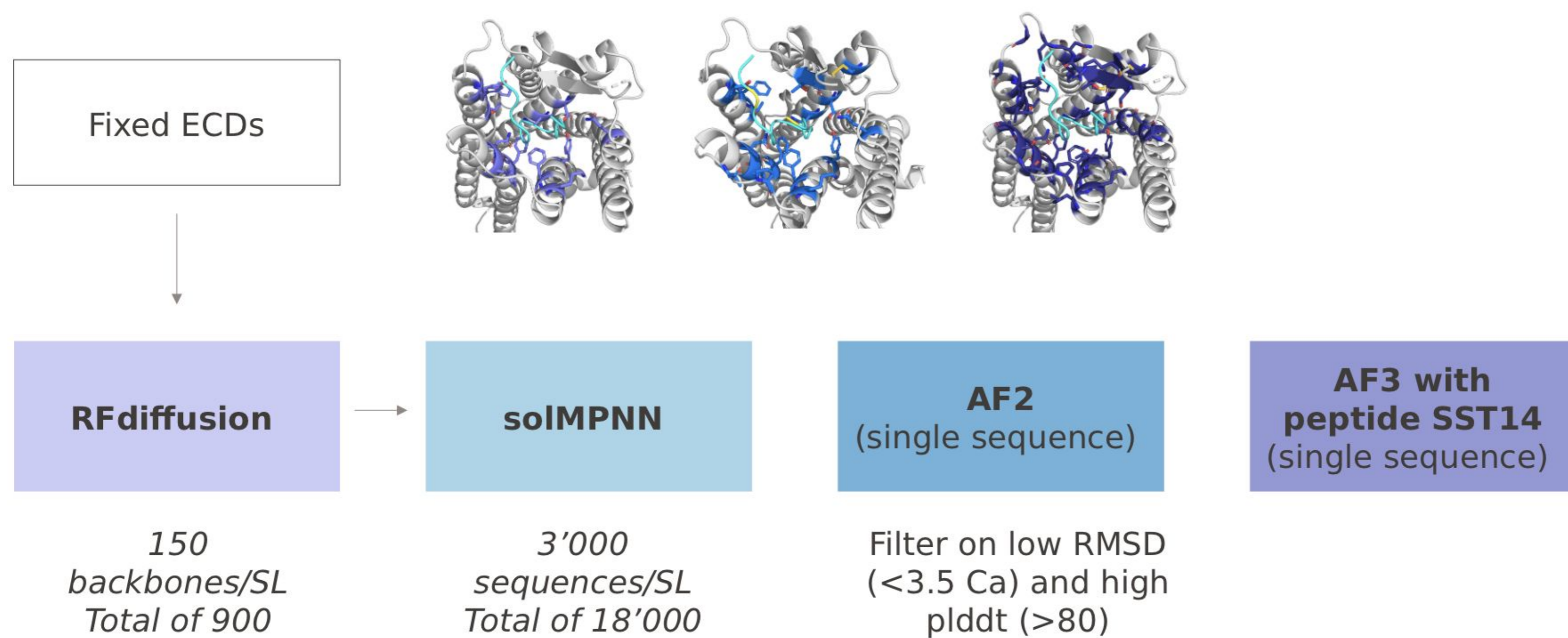


TURNING HARD-TO-STUDY CELL-MEMBRANE PROTEINS INTO SOLUBLE FORMS

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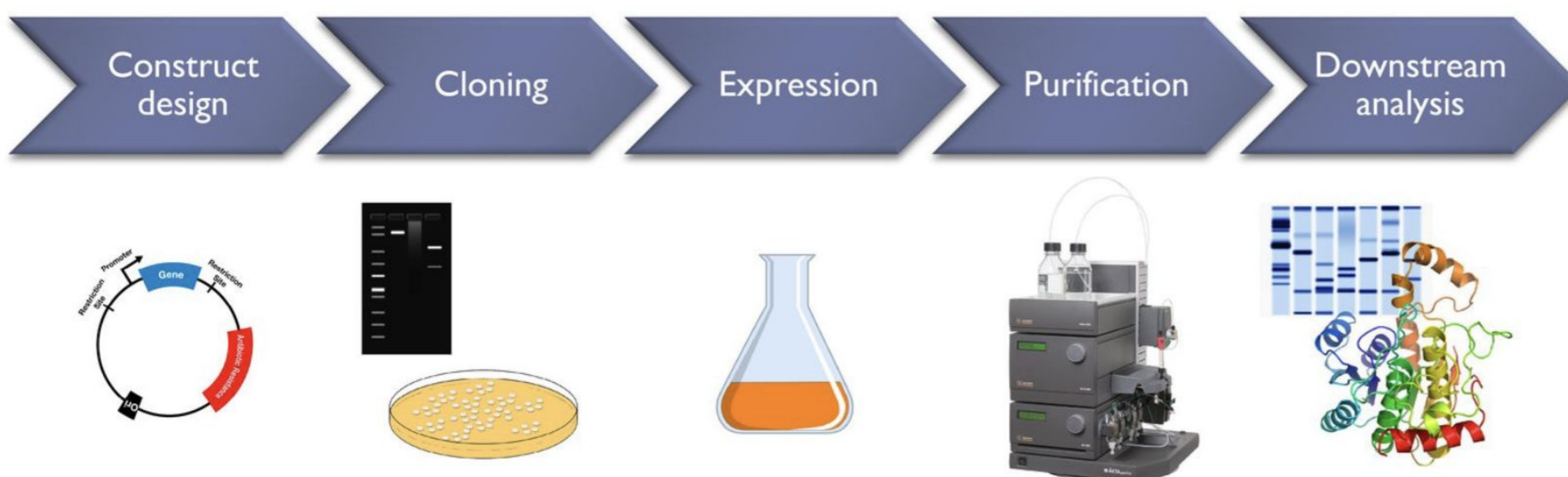
Motivation : We develop water-soluble versions of cell-membrane proteins such as Somatostatin Receptor 2 to make them easier to produce, study, and find binders for. Membrane proteins are hard to work with because part of them is hydrophobic (water-repelling), which makes them difficult to express and handle.

THEORETICAL SOLUTION



Using computer modeling, we redesign the water-repelling parts of the membrane protein while keeping its extracellular domain unchanged. This produces a water-soluble “look-alike” protein, a mimetic with the same binding surface.

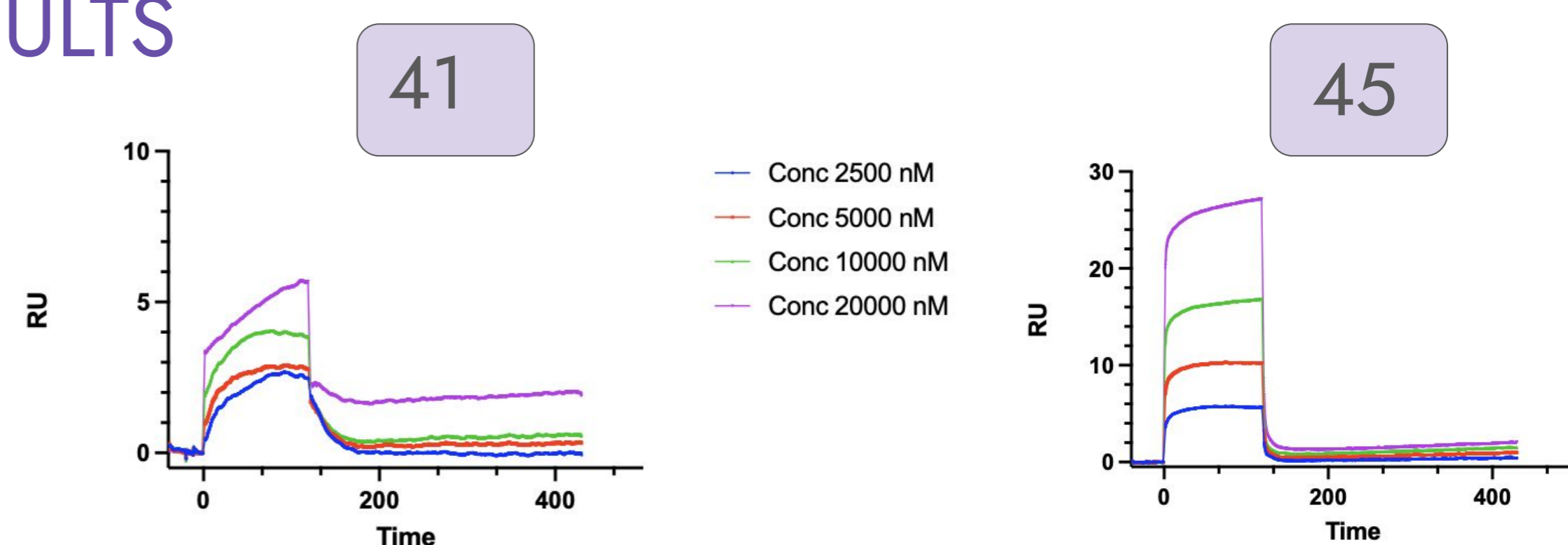
EXPERIMENTAL PROCESS



8 designs of SSTR2 soluble mimetics selected to undergo expression and purification : pPB39 to 46.

RESULTS

SEC showed that 6 of the 8 designs expressed successfully, but only 3 bound strongly to the target molecule, proving they were functional water-soluble mimetics.



SPR Results : 41 does not bind, 45 does

These soluble mimetics will help screen new binders from libraries for therapeutic research