Therapeutics & Vaccines

SYSTEM FOR DETECTING AMYLOID BETA OLIGOMER BINDERS

WARF: P240145US02

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The Invention

UW-Madison researchers have developed a new way to select protein and cyclic peptide binders of amyloid-β (Aβ) oligomers. This innovation uses a transcription factor that the inventors previously engineered to be dependent on self-association; they call it cCadC. cCadC must be self-associated to activate its promoter PcadBA. On its own, cCadC is monomeric and, when produced as a fusion with monomeric proteins, remains inactive. However, when cCadC is expressed as a fusion with a homo-oligomerizing protein, then triggering homo-oligomerization increases PcadBA-regulated transcription of the downstream reporter gene, with the activity increasing relative to the order of oligomerization, up to a tetramer. Here, the inventors fused cCadC to a soluble variant of Aβ42 and expressed the fusion in the presence of a PcadBA-luciferase construct. They tested the system against a variety of known Aβ binders, and found that cCadC activates transcription when in the oligomeric state. The inventors then created a combinatorial library of cyclic peptides and evaluated the library against the new method, and the inventors believe that they have successfully demonstrated the utility of their innovation to discover new protein and cyclic peptide binders of Aβ oligomers.

Tech Fields

- Drug Discovery & Development : Other drug discovery & development
- Research Tools : Protein interactions & function
- Therapeutics & Vaccines : CNS

For current licensing status, please contact Rafael Diaz at rdiaz@warf.org or 608-960-9847