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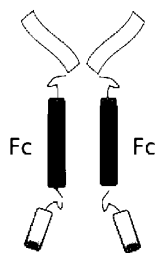
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(54) Title: BIFUNCTIONAL PROTEINS AND USES THEREOF

FIG. 1E

Notch Ligand ECD



Muscle-targeting scFv

(57) Abstract: Provided herein are compositions and methods of treating muscular dystrophies by administering an effective amount of a composition comprising a bifunctional protein comprising a first binding moiety that binds to muscle-specific molecules and a second functional domain that activates Notch signaling, thereby spatiotemporally activating Notch signaling in muscle tissues to boost satellite cell renewal in situ, and thus enhancing muscle repair/regeneration to improve muscle function as a treatment of various muscular dystrophies and sarcopenia. Also provided are engineered DLL4 extracellular domains and protein constructs comprising thereof.