# Expression and characterization of Nano-oligomeric assembly of recombinant fibronectin fusion protein

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Cell adhesion to extracellular matrix (ECM) including fibronectin plays a central role in numerous physiological and pathological processes such as morphogenesis, wound healing and normal tissue homeostasis[1]. Integrin-mediated adhesion is a highly regulated process involving receptor activation and mechanical coupling to extracellular ligands[2]. Bound integrins rapidly associate with the actin cytoskeleton and cluster together giving rise to focal adhesions, discrete complexes of structural and signaling proteins[3]. Focal adhesions are central elements of the adhesion process, functioning as structural links between the cytoskeleton and the extracellular matrix. Thus, the formation of focal adhesion is crucial to numerous biotechnological and biomedical applications, including biomaterials, artificial organs, tissue engineering, and synthetic supports for in vitro cell culture.

To promote the clustering of fibronectin and thus enhance its activity at the sites of focal adhesion formation, we have engineered a fusion protein containing recombinant fibronectin fragment (hFN) connected to the tetramerization helix domain of *lac* repressor for oligomeric assembly. Purified Lac-hFN fusion protein exhibited significant increase of cell adhesion and proliferation of GF cells compared with hFN alone ($p<0.05$).

## References

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