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Low complexity domains, condensates, and stem cell pluripotency

Vodnala M *et al.* Low complexity domain proteins and pluripotency

Munender Vodnala, Eun-Bee Choi, Yick W Fong

Abstract

Biological reactions require self-assembly of factors in the complex cellular milieu. Recent evidence indicates that intrinsically disordered, low-complexity sequence domains (LCDs) found in regulatory factors mediate diverse cellular processes from gene expression to DNA repair to signal transduction, by enriching specific

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Key words: Embryonic stem **cells**, TCF, -catenin, GSK3, **Pluripotency**, Self-renewal, Homeodomain-interacting protein kinase Introduction A major goal of developmental **and** stem cell biology is to elucidate the mechanisms that allow embryonic progenitor **cells** to choose a specific path for differentiation or to maintain their **pluripotency**.

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We simulate two IDPs this way, the **low complexity domain** of FUS and the N-terminal disordered **domain** of LAF-1, and find good agreement with experimental information about average density, water content, and residue-residue contacts.

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Author: Wenwei Zheng, Gregory L. Dignon, Nina Jo...

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