

***Dictyostelium discoideum* chromosomes are partitioned into unstable globular domains**

Ekaterina Khrameeva

*Skolkovo Institute of Science and Technology, Nobelya st. 3, Moscow, 143026 Russia,
e.khrameeva@skoltech.ru*

Sergey Ulyanov, Sergey Razin

Institute of Gene Biology, Vavilova St. 34/5, Moscow, 119334 Russia

Daniel Bredikhin, Mikhail Gelfand

*A.A.Kharkevich Institute for Information Transmission Problems, Bolshoy Karetny per. 19/1, Moscow, 127051
Russia*

Recent advances enabled by the Hi-C technique have unraveled many principles of chromosomal folding that were subsequently linked to disease and gene regulation. In particular, Hi-C revealed that chromosomes of higher eukaryotes are organized into Topologically Associating Domains (TADs), evolutionary conserved compact chromatin domains that influence gene expression. To explore principles of chromosomal folding in a soil-living amoeba *Dictyostelium discoideum*, we performed Hi-C and constructed high-resolution interaction maps that revealed the presence of small (20 – 80 kb) loose globular domains. As in the previous studies on *Drosophila* and mammalian TADs, boundaries of globular domains of *D. discoideum* were enriched with actively transcribed genes and housekeeping genes, suggesting functional similarity between globular domains of *D. discoideum* and TADs of higher eukaryotes.