Quantitative analysis of chromatin compaction in living cells using FLIM-FRET

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Abstract:

The authors quantitatively measured chromatin compaction using the fluorescence lifetime imaging microscopy (FLIM). A human stable cell line coexpressing histon H2B tagged to either EGFP or mCherry was used. FRET occurs between the two fluorescence proteins, where the donor is GFP and the acceptor is mCherry. They found three chromatin compaction states of interphase cells. The effects of the ATP depletion and TSA were also characterized. First, I will show their works including introduction of the FLIM. Then I will show and discuss a future plan.

References:

1. Lleres L, Jmaes J, Swift S, Norman DG, Lamond AI. Quantitative analysis of chromatin compaction in living cells using FLIM-FRET. *J. Cell Biol*. 187: 481-496 (2009).

2. Visvanathan A, Ahmed K, Even-Faitelson L, Lleres D, Bazett-Jones DP, Lamond AI. Modulation of higher order chromatin conformation in mammalian cell nuclei can be mediated by polyamines and divalent cations. *PLOS ONE* 8: e67689 (2013).