Abstract Submitted
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Quantifying Chromatin Compaction in HL-60/S4 Cells[1] CRISTOPHER THOMPSON , Bates College — The concepts of chromatin compaction is to measure the level of compaction of complex macromolecules found in the cells. The each set of cells were treated with sucrose or trichostatin. Sucrose condenses the DNA of the cell nucleus together, and trichostatin decondenses the DNA of the cell nucleus. The chromatin compaction method in this experiment measured and observed how DNA compacts around histones during the cell replication cycle. Our data set contained samples coated in sucrose (mM) and trichostatin (ng/ml) for levels 0, 50, 100, 200. With fluorescence microscopy, we can study the involved structural organization of DNA in a cell nuclei using antibodies. We used antibodies to mark different components of the nucleus, H1.5, FAB, DAPI, and PL2.6. These antibodies were to mark histones, nucleosomes, and DNA. We use a fixative formaldehyde and glyoxal to fix the cells in place. We used SP8 microscope to image the cells in interphase and mitosis. The tools that were used were multicrop function, open source R package nucim, and bioimagetools. The R package analysis of the crop data creates a compaction tables. This table is classes of compaction for the DNA within the nucleus.

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