Cancer Prevention Research

Table of Contents

AACR American Association for Cancer Research

November 2016 • Volume 9 • Number 11

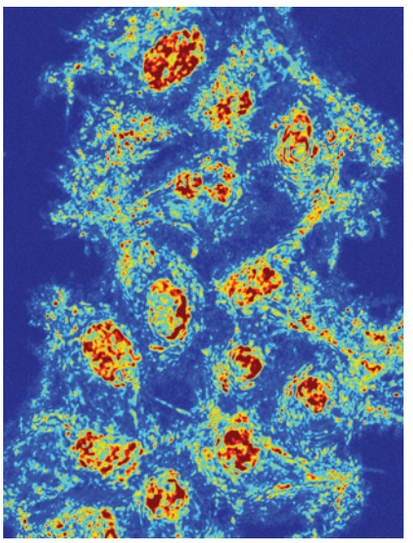
MINIREVIEW

REVIEW

RESEARCH ARTICLES

Table of Contents

ABOUT THE COVER



This cover micrograph shows the nanoscale topology of living control vector HT-29 cells imaged using live cell Partial Wave Spectroscopic (PWS) microscopy. By measuring the variations in back scattered interference spectra, live cell PWS provides label free information on macromolecular topology within seconds. Within the nucleus, these variations in intensity, or $\sum$, correspond to the physical folding of chromatin. Increases in $\sum$ corresponds to the increase in the nanoscopic heterogeneity of chromatin due to the nanoscale variations in compaction. Critically, regulation of the physical heterogeneity of chromatin is in part determined by higher-order chromatin modulators, such as the cohesin family protein, SA-1. Since higher-order chromatin modulators are concomitantly tied to gene expression, their frequent transformation in colon cancer could represent a distortion in chromatin topology preceding the formation of a tumor lesion. With the emergence of live cell PWS microscopy, the integration between the real-time folding of higher-order chromatin and transcriptional transformation can now be investigated. With this new found real-time imaging capacity, the ability to study the dynamics and regulation of chromatin may shed light on the role of chromatin transformation in oncogenesis. See article by Wali and colleagues (beginning on page 844) for more information.

Cancer Prevention Research

9 (11)

Cancer Prev Res 2016;9:821-886.