Abstract Submitted
for the EGLSF21 Meeting of
The American Physical Society

Single Molecule Investigations of Telomeric Overhangs[1] HAMZA BALCI, SAJAD SHIEKH, GOLAM MUSTAFA, MOHAMMED ENAMUL HOQUE, ERIC YOKIE, JOHN PORTMAN, Kent State University — The ends of linear chromosomes in human cells contain repeating GGGTTA sequences. These telomeric regions contain ˜10,000 bp of double stranded DNA in addition to 50-300 nt long a single stranded overhang. The telomeric overhangs fold into G-quadruplex structures that protect and cap these otherwise vulnerable regions. GQ structures are known to inhibit telomerase, a ribonucleoprotein complex that elongates telomeres, which is upregulated in most cancers. Therefore, understanding the folding patterns, stability, and dynamics of telomeric overhangs is of both fundamental and medical significance. We will present the results of our single molecule fluorescence measurements and computational studies on the accessibility and folding patterns of telomeric overhangs that are of physiologically relevant lengths.

[1]Single Molecule Investigations of Telomeric Overhangs

Hamza Balci
Kent State University

Date submitted: 27 Oct 2021 Electronic form version 1.4