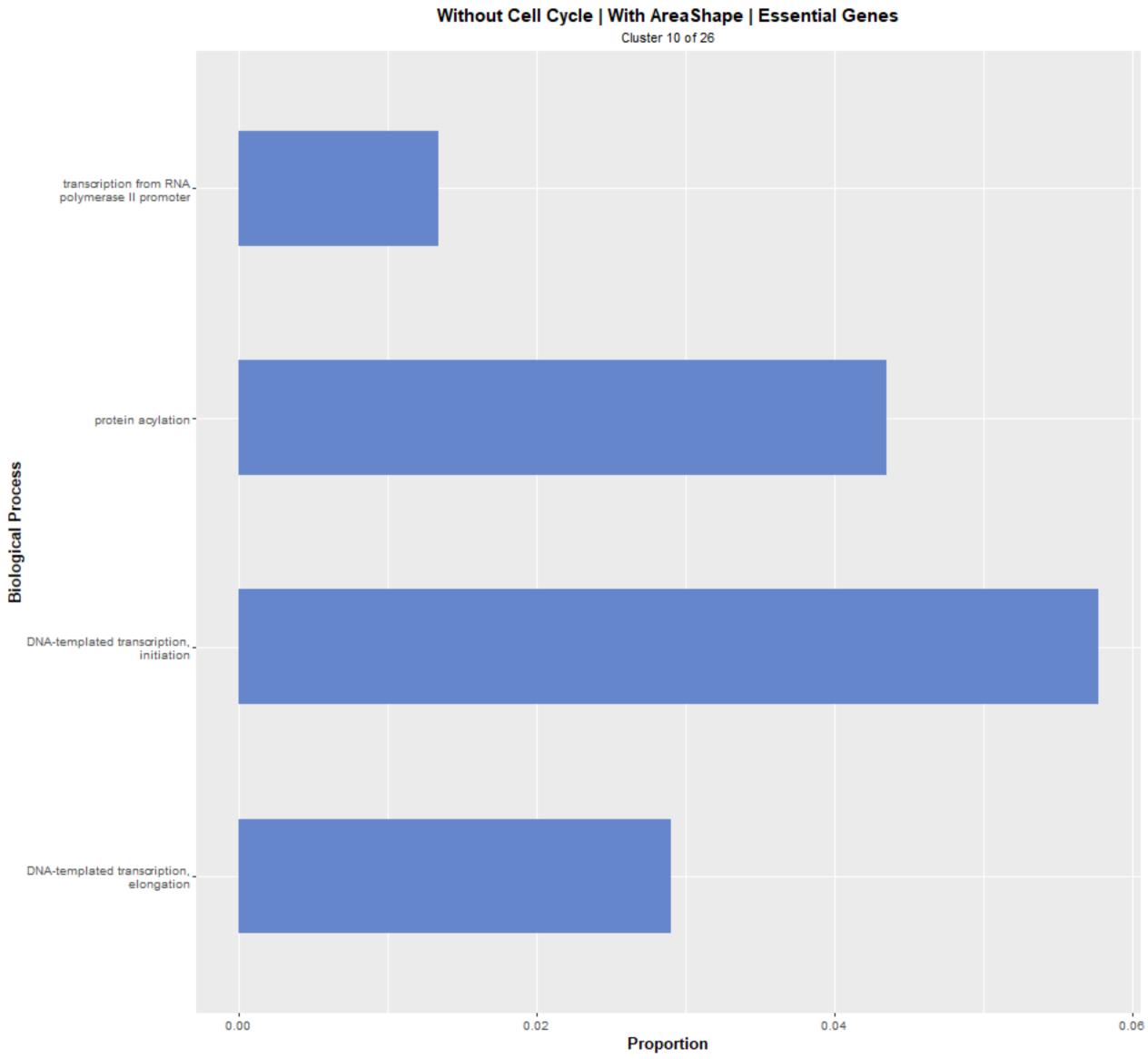
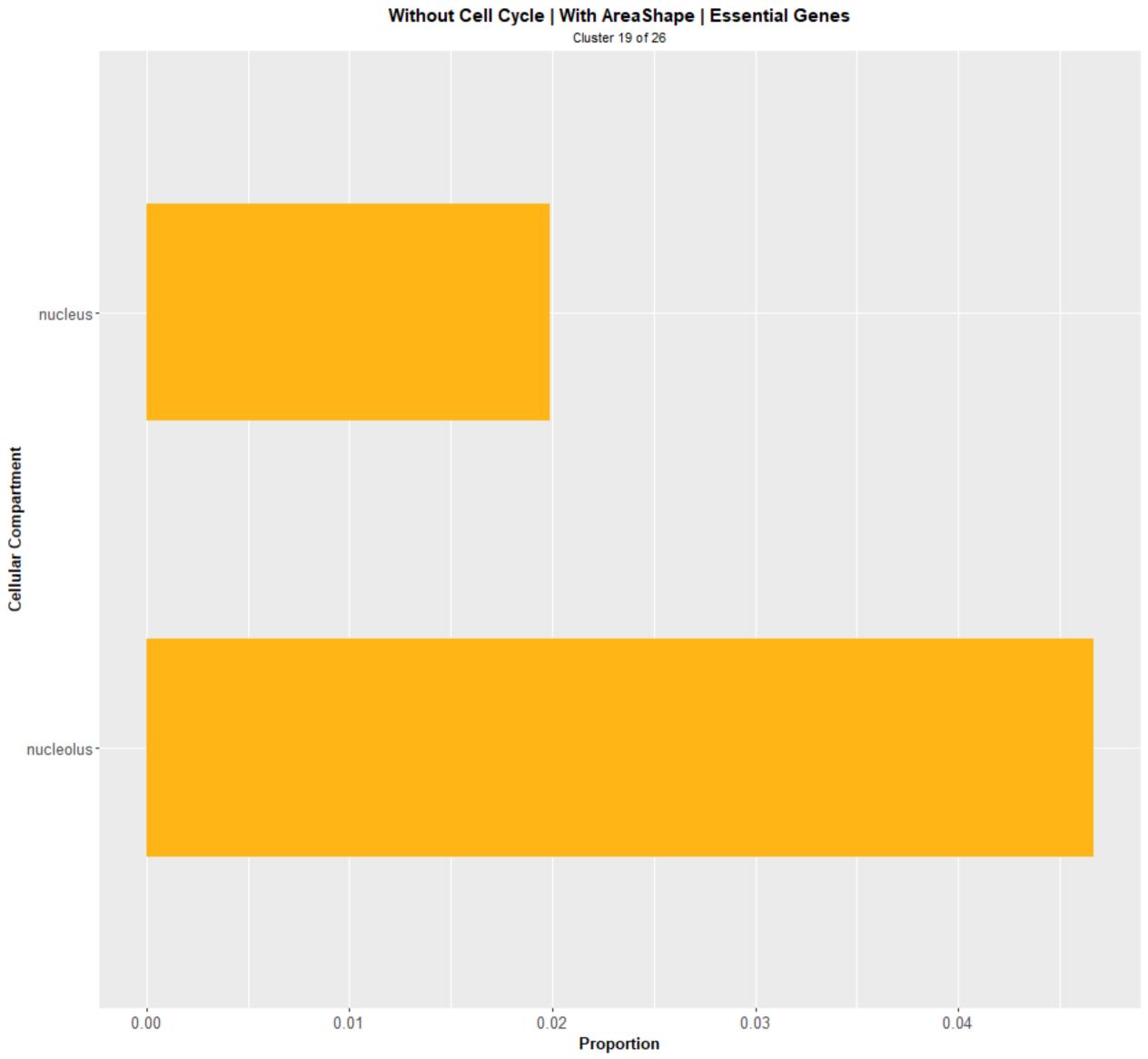
# Without Cell Cycle | With AreaShape | Essential Genes Cluster 8 of 26 Cellular Compartment 0.000 0.002 0.004 0.006 Proportion

# Without Cell Cycle | With AreaShape | Essential Genes Cluster 8 of 26 Biological Process A second or seco 0.01 0.02 0.00 0.03 Proportion

### Without Cell Cycle | With AreaShape | Essential Genes Cluster 10 of 26 Cellular Compartment 0.002 0.000 0.001 0.003 0.004 0.005 Proportion

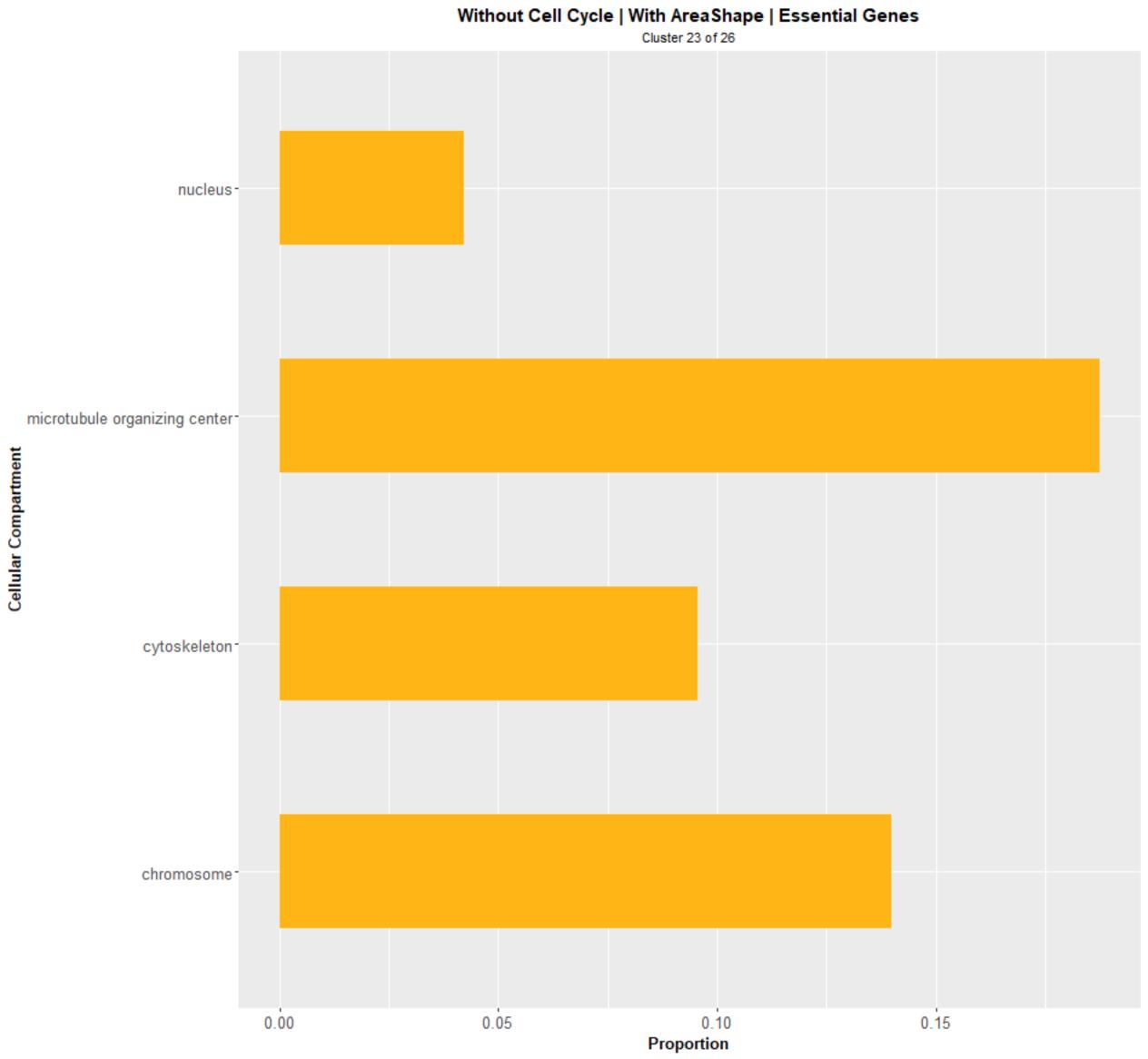




#### Without Cell Cycle | With AreaShape | Essential Genes Cluster 19 of 26 tRNA aminoacylation for \_ protein translation transcription from RNA polymerase III promoter snoRNA processing -Biological Process rRNA processing -RNA splicing mRNA processing DNA-templated transcription, termination 0.05 0.00 0.10 0.15 Proportion

### Without Cell Cycle | With AreaShape | Essential Genes Cluster 20 of 26 nucleus-Cellular Compartment nucleolus-0.075 0.000 0.025 0.050 0.100 Proportion

Without Cell Cycle | With AreaShape | Essential Genes Cluster 20 of 26 transcription from RNA polymerase III promoter transcription from RNA polymerase II promoter transcription from RNA polymerase I promoter rRNA processing -RNA catabolic process ribosomal subunit export from **Biological Process** nucleus ribosomal large subunit biogenesis proteolysis involved in cellular protein catabolicprocess nuclear transport mRNA processing -DNA replication -DNA-templated transcription, initiation DNA-templated transcription, \_ elongation 0.10 0.05 0.15 0.20 0.00 Proportion



Without Cell Cycle | With AreaShape | Essential Genes Cluster 23 of 26 regulation of organelle organization regulation of DNA metabolic process regulation of cell cycle proteolysis involved in cellular protein catabolic process protein modification by small\_ protein conjugation or removal protein complex biogenesis organelle fission -**Biological Process** mitotic cell cycle meiotic cell cycle -DNA replication -DNA repair DNA recombination -DNA-templated transcription, initiation cytoskeleton organization chromosome segregation chromatin organization cellular response to DNA\_ damage stimulus 0.05 0.10 0.15 0.20 0.00 Proportion

#### Without Cell Cycle | With AreaShape | Essential Genes Cluster 25 of 26 site of polarized growth nucleusmembrane -Golgi apparatus endoplasmic reticulumendomembrane systemcytoskeletoncytoplasmic vesiclecellular budcell cortex-0.05 0.10 0.00 Proportion

Without Cell Cycle | With AreaShape | Essential Genes Cluster 25 of 26 vesicle organization vacuole organization transcription from RNA polymerase II promoter RNA splicing ribosomal subunit export from nucleus regulation of organelle\_ organization protein targeting protein lipidation protein complex biogenesis protein acylation peptidyl-amino acid\_ modification organelle inheritance organelle fusion nucleobase-containing compound transport nuclear transport mRNA processing mitotic cell cycle membrane fusion lipid metabolic process histone modification -Golgi vesicle transport exocytosis -DNA-templated transcription, \_ termination DNA-templated transcription, initiation cytoskeleton organization cytokinesis -

0.2

Proportion

0.3

0.4

**Biological Process** 

0.0

0.1