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**Activity of DdiTLP4 on RNAs in Dictyostelium Discoideum**[1]
CARLOS OWUSU-ANSAH, College of Wooster, RALF BUNDSCHUH, The Ohio State University — RNA polymerases usually add nucleotides to the 3'end of RNAs, but TLPs (Thg1-like proteins) add nucleotides to the 5'ends of RNAs. Our investigation is part of the broad attempt to understand this behavior. We worked with DdiTLP4, a TLP found in Dictyostelium. Our collaborators cultivated two sets of Dictyostelium samples: one set contained cells with suppressed levels of DdiTLP4 and the other contained normal cells. A range of nucleotides at the 5'ends of RNAs in the samples were sequenced. Our role in this investigation was to analyze RNA reads to determine DDiTLP4 activity. Since we were looking for changes in 5'ends resulting from direct DdiTLP4 activity, we discarded differences in 5'ends which resulted from differential gene expression. This was accomplished by grouping RNAs which aligned to neighboring positions of the genome and analyzing each batch separately. Differences in 5'end counts due to the differential expression of genes manifest as the scaling of the counts of one treatment relative to the other. Conversely, differences in 5'end resulting from direct DdiTLP4 polymerase activity change the fractional composition of the knockdown batches relative to the wildtype batches.

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Carlos Owusu-Ansah
College of Wooster

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