TABLE I

Changes in DNA Replication Produced by Inhibitors of Protein Synthesis

Experiment[a]	Rate of Fork Progression	Initiation Interval
	kb/min ($\overline{X}$ ± S.E.)	*kb* ($\overline{X}$ ± S.E.)
1. Antibiotic added at time of hot pulse		
Control	1.91 ± 0.057	215 ± 16.8
Cycloheximide (1.8×10^{-4} *M*)	0.93 ± 0.056[b]	126 ± 7.6[b]
Puromycin (4.2×10^{-4} *M*)	1.71 ± 0.058	127 ± 9.8[b]
2. Antibiotic added 2 hr before hot pulse		
Control	2.02 ± 0.055	203 ± 16.2
Cycloheximide (1.8×10^{-4} *M*)	0.96 ± 0.045[b]	99 ± 6.8[b]
Puromycin (4.2×10^{-4} *M*)	0.81 ± 0.024[b]	102 ± 8.0[b]

[a] Monolayers of L-929 cells were treated with fluorodeoxyuridine (2×10^{-6} *M*) for 30 min to exhaust their thymidine nucleotide pools and then sequentially labeled with ^{3}H-thymidine at 50 C/mmole (5×10^{-6} *M*) for 30 min (the hot pulse) and 5 C/mmole (5.5×10^{-3} *M*) for 30 min (the warm pulse). Fluorodeoxyuridine remained in the medium during the pulse to increase the incorporation of exogenous ^{3}H-thymidine. Antibiotics were added to experimental monolayers as 100× concentrated solutions in tissue culture medium at the time of the hot pulse (experiment 1) or 2 hr before the hot pulse (experiment 2). At the completion of the pulse, the cells were washed and their DNA was processed for fiber autoradiography. The technique and the methods for scoring autoradiograms are described in the text.

[b] Values that are significantly different from the controls ($P < 0.001$).