R

Persistence Length of Chromatin Determines Origin Spacing in *Xenopus* Early-Embryo DNA Replication

Q a a C a B ⌡ T a E

ABSTRACT

I *Xenopus* a , a f DNA a S/M , f ⌡ f (3 , a) a ⌡ 10 20 . T q za - DNA a , , ⌡ a a a , a , f . W a a DNA a aa

KEY WORDS

I , , , *E. coli*, , *S. cerevisiae*, , -
, , , , , . D A , [1]
I *Xenopus* Drosophila , , , , -
D A . I , , ( ). B , -
, , , 10 20 , -
(3 ,).[2,3] /[4] D A.
, , [5]
.[6] I , ( ), , -
, [7,8] I , (,), -
, [9] I , , -
Xenopus , -
D A , -
F , [10]
(DI I H)[9,11]

MATERIALS AND METHODS

Analysis of Molecular Combing Experiments on Early-Embryo Xenopus.

Xenopus

Xenopus

(1 μ = 2.0 ± 0.1 ; 20).

Looping of a Helical, Wormlike Polymer Chain: Statistics and Dynamics.

$$\tag{1}$$

$$\tag{2}$$

Computer Simulations.

$\Delta I_{i2i} = I_{i2i\_exp} - I_{i2i\_random}$, (Fig. 3B).

($I_{i2i} < 20$), ($P = 4 \times 10^{-33}$; $\chi^2 = 165$, $n = 6$). 8 (4 5).

10^2 .[7]

8 16 (13).

5 15 [9,12] *Xenopus* C (C)[26,27] (I_{i2i} " 20) ($P = 0.14$; $\chi^2 = 34$, $n = 26$),[28]

Eye-Size Correlations and Origin Synchrony. Fig 4 B B (0.16).[9]

$I(x,t)$ [29] x t ( ). Fig 4, C (■) A

Origin Spacing, Loops, and Replication Factories. (< 20) ( ),[16,17,30] A

C %t %N(t) = I(t) %t x L (L D A t), I(t),[8]

Refe e ce

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