

***Tetrahymena pyriformis*(Ehrenberg,1830)**

(2006/3/27 2005/10/26)

EC 3.5.4.5)

. *Tetrahymena pyriformis* (Cytidine deaminase

(7.4) Tris-HCl Buffer (300)
 (250) (3)
 . (12) (35)
 (0.91±32.24)

(CMP)

**Presence and Properties of Cytidine Deaminase in Free living
 Ciliata *Tetrahymena pyriformis***

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ABSTRACT

The present investigation indicated the presence and properties of cytidine deaminase (EC.3.5.4.5) activity in the extract of the free living ciliata *Tetrahymena pyriformis*.

The optimum conditions for the enzyme activity were determined. Maximum enzyme activity was obtained in a reaction mixture of (300)µM of Tris-HCl buffer at pH

(7.4) containing (3) mM of cytidine as a substrate, (250)µg protein as a source of the enzyme, and an incubation period of (12) min. at (35)°C.

Under the optimum conditions, the specific activity was found to be (32.24±0.91)µM of cytidine deaminated per min per mg protein in the supernatant of *Tetrahymena pyriformis* extracts. The Results also indicated that cytidine monophosphate (CMP) might be used as alternative substrate for the enzyme under investigation .

(Ciliata)

Tetrahymena pyriformis

(Corliss, 1954)

(Carter and Cameron, 1973)

.(Fink and Zeothen, 1980)

(Corliss, 1960)

.(Saglam and Sarieyyupoglu, 2002)

(UMP)

() Orotate Pathway

.(Jones, 1980)

de novo Pathway

UMP

Salvage Pathway

,(1991)

.(AL-Chalabi et al., 1993)

Deamination

Cytidine deaminase (EC 3.5.4.5)

Cytidine aminohydrolase

(Faivre-Nitchke et al., 1999)

()

.(Blackburn, 1998)

(Sakai et al., 1971; Vita et al., 1985; Bqyum et al., 2000)

.....

Leshmania major

Leishmania donovani

Trichomonas vaginalis

(Hassan and Coombs, 1986; 2000

)

.(2002

)

)

.(Eliopoulos et al., 1998; Bqyum et al., 2000; Alta'ee and Ewadh, 2003;2001

Proteose Peptone

Tetrahymena pyriformis

((500))

%20 Hay Infusion

Dias) Proteose Peptone

(1992)

(1±27)

(et al., 2003

(2000

) (5-4)

.Hemocytometer

Stationary

³ / (10⁹*1) phase

.(Eichler, 1989) (4)

(15) (3000xg)

(7.2)

(10) Tris-HCl Buffer

/ (24.000) (Ultra-sonic disintegrater)

(15)

(30)

(4)

: Pellet Supernatant (10) (9000 xg) Crude Homogenate()

Sakai et) (290)
 () (3) 3 (1) (al.,1971)
 (7.4) Tris-HCl Buffer (200)
 (37)
 (0.1) ³ (4)
 .(HCl)
 (290)
 (2000) (2.2mM⁻¹.Cm⁻¹)
 . (Lowry et al., 1951)

(1)

Kidder, 1984; Hassan and Coombs,)

Crithidia fasciculata

(1986

(2000 ,)

Trypanosoma cruzi

(2004)

Trichomonas vaginalis

T. pyriformis

.....

:1

T. pyriformis

		\pm	*
—	100	0.16 ± 6.23	
317+	417	0.73 ± 25.97	
48-	52	0.02 ± 3.25	

. / / : *

(20)

(12)

(1)

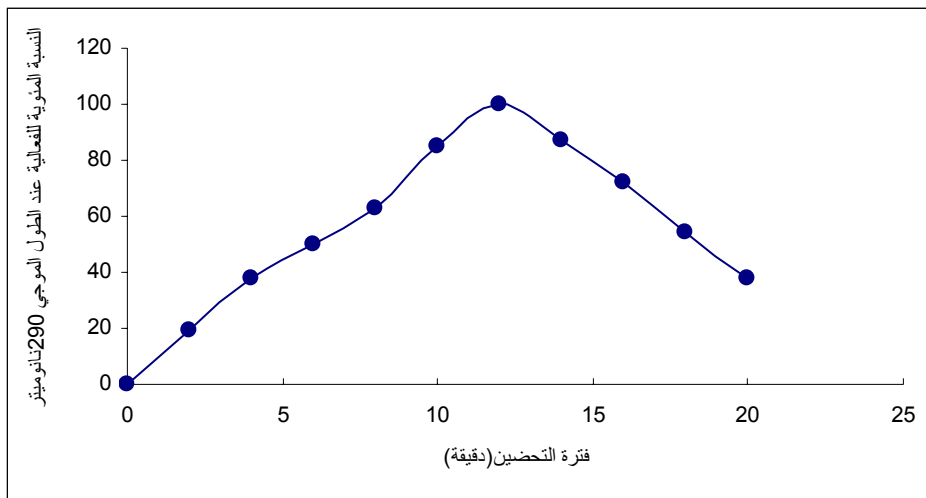
(10)

(Ashley and Bartlett, 1984)

E.coli

) (10)

.(2004 ,



:1

(35)

(2)

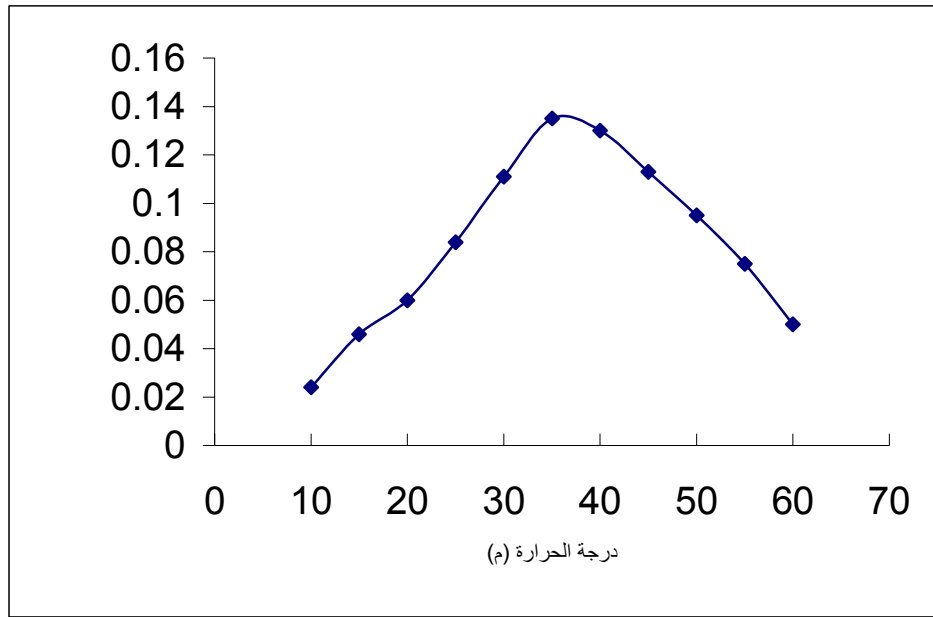
. *T. pyriformis*

(35)

(35)

(2000)

. *L. major*



:2

. *T. pyriformis*

(3)

(350-50)

(250)

()

(2004)

(2)

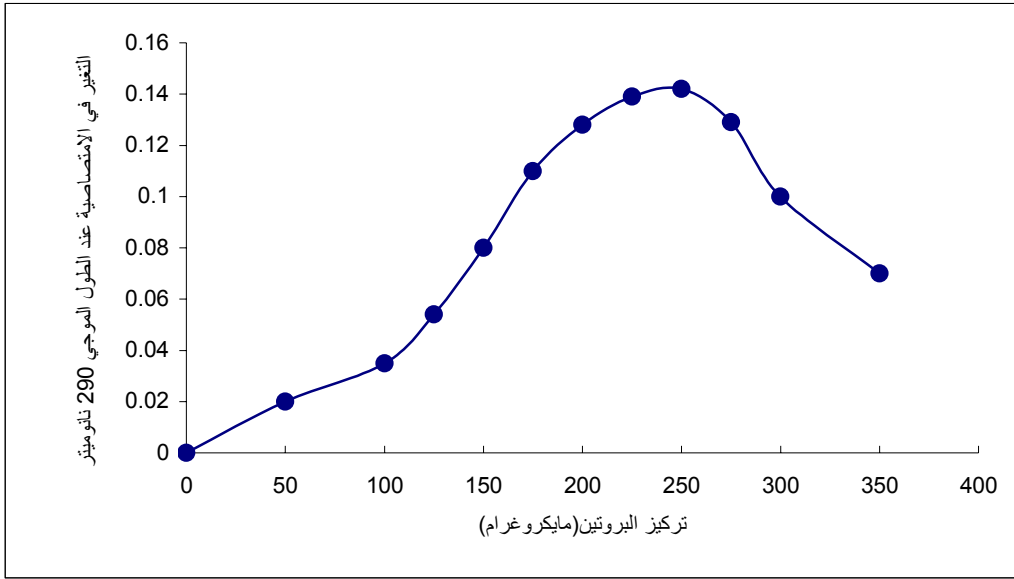
200 Tris-HCl Buffer

(0.58± 32.1)

(7.2)

Tris-HCl Buffer

.....



() : 3

T. pyriformis

Tris-HCl Buffer (3)

Tris-HCl Buffer

(300)

:2

T. Pyriformis

+	* ±	Buffer
51	1.00 ± 16.23	200µM Potassium Phosphate
100	0.58 ± 32.10	200µM Tris -HCl
20	0.70 ± 6.29	200µM Citric Acid, Sodium Citrate

./ / : *

. % 100 : +

Tris-HCl Buffer

: 3

T. pyriformis

+	* ±	Tris-HCl Buffer
31	0.50 ± 13.26	100
46	1.73 ± 19.48	200
100	0.58 ± 42.21	300
62	0.74 ± 25.97	400
54	1.07 ± 22.73	500

· / / : *

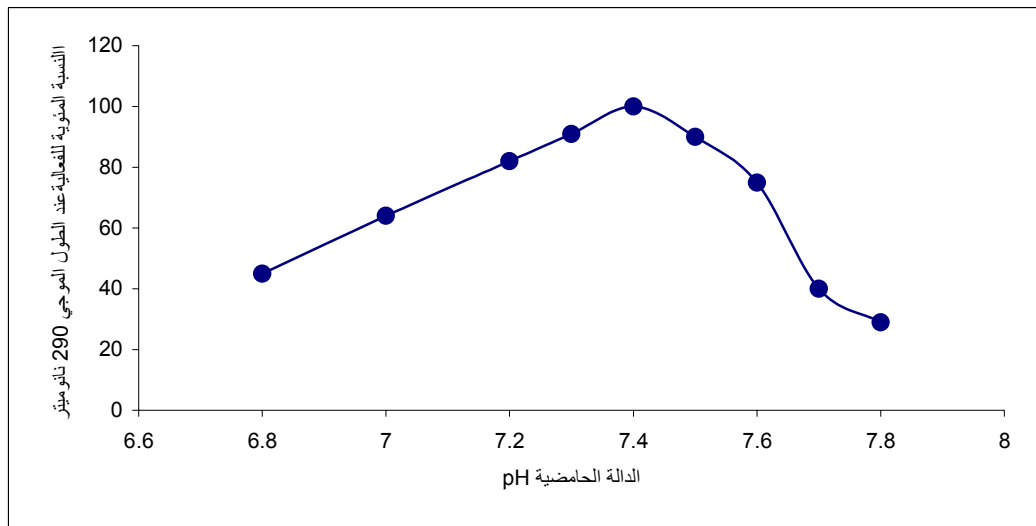
. % 100 : +

(4) (pH) (pH)

(7.4) pH

(Hassan and Coombs, 1986)

(2000) (7.4) Tris-HCl Buffer



Tris- :4

(300)µM HCl

.....

(4)

T.pyriformis

:4

+	*	
	±	
100	0.91 ± 32.24	
0	0.0	
0	0.0	

/ /

:

*

Tris-HCl Buffer

(300)

(12)

250

(3) (7.4)

(35)

(3)

(CMP)

(5)

(%58)

()

(300)

(3)

()

(250) (7.4)

Tris-HCl Buffer

(35)

(12)

()

T. pyriformis

T.

.pyriformis

T.pyriformis

: 5

+	*	
	±	
100	0.08 ± 29.22	Cytidine
58	0.43±17.11	CMP
-	0.0	Cytosine
-	0.0	Thymidine

/ /
% 100

*
+

.1991

.138-107

.2000

. 1992

.*Tetrahymena pyriformis*

.1999

Tetrahymena pyriformis

.2000

.35-22:(4)11.

.*Tetrahymena pyriformis*

.2001

.2002

Trichomonas vaginalis

.2004

.(*Trichomonas vaginalis*)

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