

# EFFECT OF APIUM GRAVEOLENS AND INSULIN ON BIOCHEMICAL EVALUATION OF LIVER ENZYME : AND GLUCOSE URINE

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## **Abstract:**

This study aimed to evaluate the ability of apium graveolens and insulin to decrease liver enzyme and urine glucose in

diabetic male rabbits by alloxan monohydrate. In this study twenty four of adult male rabbit were randomly divided into four equal groups (control and three diabetic groups). one week later, T1 diabetic non treated, the T2 treated with insulin (3IU), treated with apium graveolens extract orally 151mg/kg daily for 7 weeks.

treatment beginning from 2nd week this study induced aimed to determine the **reveal that insulin at dose 3IU/animal appear significant difference (p<0.05)**

good ability to decrease ALT&AST after two weeks from also therapeutic use of apium graveolens appear **appear significant difference (p<0.05)** to decrease liver enzyme due to ability to regeneration of cell to near from normal, urine sample appear high level of glucose in urine in non treated diabetic animal at end of experiment while apium extract & insulin decrease excretion of glucose in urine within normal level.

## INTRODUCTION

The incidence of diabetes is growing rapidly both in USA and worldwide .for example , it is estimated that more than 180 million people . in the USA approximately 21 million people are estimated to suffer from diabetes . the ADA recognizes four clinical classification of diabetes .Type 1Diabetes ,type 11Diabetes ,gestational diabetes and other cause(Campbell etal.,2005 ). Celery is one of medical plant used in treatment of diabetes , consist of many active ingredient such as alkaloid, Comarine and umbilifeone have hyperglycemic effect

Materials and methods

1-Alloxan monohydrate 100mg/kg

2-insulin

3-ALT,AST Kit

4-urine stripe

Materials and methods

In this study twenty four of adult male rabbit were randomly divided into four equal groups (control and three diabetic groups).one week later ,T1diabetic non treated ,the T2treated with insulin (3IU) , treated with apium grave lens extract orally 151mg/kg daily for 7 week.

Sample :

Fasting Blood sample are collected at the end of each weeks for determination of biochemical study after 3 hour of treatment blood sample collect from ear vein . urine sample are collect at end of experiment only .

Evaluation of ALT and AST in blood sample

Coloric method of Reitamin&Frank(1957) are used by use of kit from spinorect company.

Urine sample are evaluated by use of reagent stripe from CYBO company.

Effect of apium graveolens &insulin on urine glucose level of male rabbit.

T3	T2	T1	C	Group
±	-	++	+	1
±	-	+++	-	2
±	-	++	-	3
±	-	++	-	4
-	-	++	-	5
-	-	+++	-	6

Effect of apium grave lens &insulin on ALT IU\L level of male diabetic rabbits.

T3	T2	T1	C	Group
28.33±4.34 CBA	22.16±7.07 abA	31.16±4.33 bA	10.16±1.74 aA	1
20.83±5;18 bA	20.50±3.64 bA	26.26±2.40 bA	9.16±1.01 Aa	2
21.83±4.33 abA	17.66±3.66 aA	31.38±8.63 bA	10.33±0.45 aA	3
27.50±1.50 aA	18.16±2.52 aA	38.50±3.40 bA	9.44±1.ed8 aA	4
27.50±1.50 aA	27.50±2.23 bA	36.66±3.51 cA	10.5±1.45 aA	5
16.66±2.26 aA	15.38±0.98 aA	34.60±4.04 aA	9.5±1.17 aA	6
13.00±0.40	14.16±2.60	37.16±7.9	10.5±1.17	7

aA	aA	bA	aA	
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®The number refer to range and standard error

®small different later refer to presence of significant differences between groups of(p<0.05).

®capital different later refer to presence of significant differences between weeks of groups (p<0.05).

Effect of apium grave lens & insulin on AST IU\L level of male diabetic rabbits.

T3	T2	T1	C	Group
46.60±8.52 bA	53.50±6.75 bcA	66.50±1.70 CA	13.38±1.16 aA	1
34.5±2.70 bB	34.83±3.08 bBC	45.00±3.17 cB	13.00±1.06 aA	2
28.16±1.70 bBC	26.66±1.11 bBC	37.16±4.83 cBA	13.5 ±1.38 aA	3
23.5±2.9 bBCA	24.5±3.79 bCE	36.50±1.46 cBA	12.66±0.88 aA	4
22.66±2.82 aCE	18.5±2.26 aCE	43.83±7.12 bA	12.83±0.70 aA	5
18.5±1.9 aCE	17.00±3.49 aE	5.14±0.29 bBC	14.60±1.80aA	6
17.00±2.11 aE	16.5±1.78 aE	32.16±3.32 bC	14.16±0.70 aA	7

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## Discussion

This study reveal to increase of ALT&AST in serum blood due to increase destruction of tissue specially liver and kidney ,in diabetic kidney (Alkaragoly,2007) while normal animal as control still level normal ,after treatment t2&t3 decrease apium level to repair of cell destruction and regeneration by reduce free radical ,it believed that action due to that apium grave lens increase of antioxidant sorbitol dehydrogenase and glutamic dehydrogenase (Taher etal .,2007).this result refer to increase of glucose in urine after induction of diabetes this date agreement with olivelira eta .,2008. While in treated group with insulin and apium grave lens due to ability of extract to scavenger alloxan from body &regeneration of kidney near to histopathological changes of kidney treated with (Ahmed etal.,2002 ALjubori,2009).

## Conclusion Recommendation

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- Apium grave lens have ability to decrease of ALT and AST ENZYME.
- Apium grave lens have ability to decrease of glucose in urine.

1- determination of alkaline phosphate, sorbitol dehydrogenase .

## Referance

- 1-Alkaragoly,h.k.(2007).clinopathology study of experiment induced diabetes domestic rabbits .m.sc.thesisof collage of vet .med\university oh Bassrah.
- 2-Ahmed,B.;ALAM,T.;VARSHNEY,M.&KHAN,A.(2002)  
.Hepatoprotective activity of to plant apiaceae and euphorbiaeciae family .j.of ethanopharmacol.79(3):313-316.
- 3- ALjubor,A.;M.(2009).Effect of seed apium graveolens and insulin in treatment of diabetic male rabbit .
- 4-Campbella,N,A.&Recce,G.B.(2005).Non pitutary hormon
- 5-oliveira,H.C.; Maritinis,D.T.;Llma,j.S(2007).Antidiabetic ethanopharmacol .115(3)515-519.