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## إضافة مقترح بحثي جديد لمقرر 600 كيج

### \* عنوان المشروع باللغة العربية \*

دراسة تأثير حمض الكوماريك على نشاط انزيمات أبيض الجلوكوز في الجرذان المستحثة بالسكر

### \* عنوان المشروع باللغة الإنجليزية \*

The effect of coumaric acid on the activities of key enzymes of the glycolytic pathway in streptozotocin-induced diabetic rats

### \* المشرف الرئيس \*

Dr. Abuelgassim Omer Abuelgassim

### \* التخصص الدقيق للمشرف الرئيس \*

enzymes and metabolic regulation , clinical biochemistry

### \* المشرف المساعد \*

will be announced latter

### \* المدة المتوقعة لإنجاز البحث منذ الحصول على موافقة عمادة الدراسات العليا (بالشهور) \*

12 month

## Abstract or synopsis of the proposal (200 words or less): \*

Recent reports referred to the hypoglycemic as well as hypolipidemic effect of coumaric acid . This proposed project target to support the hypoglycemic effect of coumaric acid and also attempt to study the action of coumaric acid through the regulatory enzymes of the glycolytic pathway namely hexokinase, phosphofructo-1- kinase , and pyruvate kinase in streptozotocin - induced diabetic rats

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## Hypothesis or scientific justification of the proposal \*

This proposed project attempts to study the action of coumaric acid through the regulatory enzymes of the glycolytic pathway namely hexokinase, phosphofructo-1- kinase , and pyruvate kinase in streptozotocin - induced diabetic rats

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## Specific objectives \*

- 1/ To study the hypoglycemic effect of coumaric acid
  - 2/ To study the effect of coumaric acid on hexokinase activity of diabetic rats
  - 3/ To study the effect of coumaric acid on phosphofructo-1-kinase activity of diabetic rats
  - 4/ To study the effect of coumaric acid on pyruvate kinase activity of diabetic rats
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## Methodology & Major Techniques to be used \*

Adult male Wistar rats (170-220g) will be divided into 6 groups

1/ Normal control rats

2/ Normal control rats + coumaric acid (40 mg/KBW)

3/ Normal control rats + coumaric acid (100 mg/KBW)

4/ Diabetic control rats

5/ Diabetic control rats + coumaric acid (40 mg/KBW)

6/ Diabetic control rats + coumaric acid (100 mg/KBW)

Treatment will continue for six weeks , then intestinal mucosa and liver tissues will be excised and assayed for HK , PFK1, and PK activities . Also blood aliquots will be extracted after each week of treatment and assayed for lipid profile.

Major Techniques to be used are spectroscopy ,and centrifugation

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## Availability of Samples \*

Yes

No

If the answer is NO, kindly justify

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## Availability of Chemicals \*

Yes

No

If the answer is NO, kindly justify

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### Availability of Instruments \*

Yes

No

### Availability of Ethical Approval (if needed) \*

Yes

Not needed

Not finished yet

### Recent References \*

Amalan V, Vijayakumar N, Indumathi D, Ramakrishnan A. Antidiabetic and antihyperlipidemic activity of p-coumaric acid in diabetic rats, role of pancreatic GLUT 2: In vivo approach. Biomed Pharmacother. 2016 ;84: 230-236.

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