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List of Abbreviations

A	Venom manually extracted
AC	Carniolan venom manually extracted
AE	Egyptian venom manually extracted
AHV	Africanized honeybee venom
ANOVA	ANalysis Of VAriance
APS	Ammonium persulfate
B	Venom electrically stimulated
BC	Carniolan venom electrically stimulated
BE	Egyptian venom electrically stimulated
BPB	Bromophenol blue
BSA	Bovine serum albumin
BV	Bee venom
BVM	Bee venom melittin
D	Dark at room temperature
Da	Dalton
EHV	European honeybee venom
F	Freezer
H	Hour
HBV	Honey bee venom
IEF	Isoelectric focusing
KDa	Kilo- Dalton
L	Light at room temperature
LD50	Lethal Dose
LSD	Least Significant Different.
M	markers
Mg	milligram

Min	minute
MW	Molecular weight
Nm	Nanometer
PAGE	Polyacrylamide gel electrophoresis
PBV	Purified bee venom
pI	Isoelectric point
PLA2	Phospholipase A2
R	Refrigerator
RBC	Red blood cell
Rm	Relative mobility
S.E.	Standard error
S.I	Similarity index
SDS	Sodium dodecyl sulphate
TCA	Trichloroacetic acid
TEMED	N,N,N',N' - tetramethylenediamine
Tris	Tris (hydroxymethyl) amino methane
TRU	Turbidity reducing units
U	Unit
µg	Microgram
µl	Microliter
UV	Ultraviolet
W/V	Weight per volume

ABSTRACT

In the present study the spectrophotometer, electrophoresis and toxicity studies were carried to evaluate: 1- efficiency of the venom components for two honeybee subspecies (*A. m. lamarchii* & *A. m. carnica*) extracted by two different methods (manual extracted and electrical stimulated) 2- the effects of storage conditions (freezer, refrigerator, room temperature in the dark and in the light) on efficiency of venom components stored for 24 months. The results obtained revealed that venom electrically extracted (Egyptian & Carniolan subspecies) and the Egyptian bee venom (manually & electrically extracted) have significantly highest activities of the hyaluronidase, PLA2, melittin, protease and toxicity.

The different storage conditions were also significantly affected on enzymatic and melittin activities, electrophoretic mobilities and toxicity of the bee venoms during the storage periods. Melittin was the highest affected with storage conditions in the freezer, followed by refrigerator and under room temperature in the light condition, respectively. PLA2 activity was the most affected with storage under room temperature in the dark condition during all storage periods in the two bee venoms.

Lowest values of the reduction (%) in the enzymes and melittin activities and toxicity were detected under freezer storage condition while the highest values of the reduction (%) were under storage at room temperature in the light condition for the two bee venoms during the storage periods. Freezing was the best storage conditions for honeybee venom within the range that assures

preserve maximum activity of their components, stability and prolonged storage with high quality and efficiency.

The Egyptian bee venom has significantly higher activity and toxicity than Carniolan bee venom under all storage conditions during storage periods and was the better form for potential pharmacological source.

Key word:

Electrophoresis – venom – honeybee – storage conditions
enzyme activities – melittin – LD50.