

:

joshaghanihr@goums.ac.ir :

// : // :

IBL

SOD

SOD,GPX

MDA

ELISA

%

GPX MDA

SOD t :

.(p< / )

.(p< / )

(SOD, EC 1.15.1.1)

Hammond and Hess)

SOD .(1985

.(Oakeshott et al. 2005)

SOD .(Kodama et al. 1989)

Cu/Zn SOD)) SOD -

SOD (Mn-SOD) SOD  
Horiuchi et al. ) (EC-SOD)  
(2004)

CBC LaMotta and ) SOD  
(Woronick 1971  
(GPX)

rSOD , rGPX  
( )  
( IBL) ELISA sSOD  
MDA

GPX SOD  
)  
(

%  
%  
%  
%  
( )  
ANOVA t  
%

( / ± / ) (rSOD)  
(rGPX)  
(% ) (sGPX) (sSOD)  
( ) (MDA)

(% )

)

(

(Ranjbar et al. 2002a)

IU/L 2067 ± 7970 IU/L 2496 ± 9569

Panemangalore

IU/grHb10.8 ± 48.1

IU/grHb 16.9 ± 37.4

SOD

( $p < /$  )

%

SOD t

( $p < /$  )

Panemangalore et al. )

%

(1999

MDA

( $p < /$  )

Dowla

GPX

( $p < /$  )

( $p < /$  )

GPX ( $p < /$  )

CHE SOD (acephate)

maleic )

SOD (hydrazide

(Dowla et al. 1996)

Prakasma

(Prakasama et al. 2001)

(dipterex)

MDA

SOD, GPX, AChE

(Zhou et al. 2004)

---

(paraquat)

-

(Ranjbar et al. 2002b)

( )

SOD

-

(Shadnia et al. 2005)

DNA

( )

SOD

Olgum and Misra )

(2006)

( )	( )	
( / )	( / )	
( / )	( / )	%
( / )	( / )	%
( / )	( / )	%
( / )	( / )	%
( )	( )	

rGPX (U/gr Hb)	rSOD (U/gr Hb)	sGPX (U/L)	TANT (mmol/l)	MDA (nmol/ml)	sSOD (U/ml)	
/ ± /	±	±	/ ± /	/ ± /	/ ± /	*
/ ± /	±	±	/ ± /	/ ± /	/ ± /	**
/ ± /	±	±	/ ± /	/ ± /	/ ± /	
/ ± /	±	±	/ ± /	/ ± /	/ ± /	*
/ ± /	±	±	/ ± /	/ ± /	/ ± /	**
/ ± /	±	±	/ ± /	/ ± /	/ ± /	

\*\*

\*

:TANT

:MDA

:sSOD

:rGPX

:rSOD

:sGPX

sGPX1	sGPX2	rSOD1	rSOD2	rGPX1	rGPX2	sSOD1	sSOD2	MDA1	MDA2	TANT1	TANT2	sCHE
±	±	±	±	±	±	±	±	/ ± /	/ ± /	/ ± /	/ ± /	
±	±	±	±	±	±	±	±	/ ± /	/ ± /	/ ± /	/ ± /	
±	±	±	±	±	±	±	±	/ ± /	/ ± /	/ ± /	/ ± /	
±	±	±	±	±	±	±	±	/ ± /	/ ± /	/ ± /	/ ± /	
±	±	±	±	±	±	±	±	/ ± /	/ ± /	/ ± /	/ ± /	

sGPX1	sGPX2	rSOD1	rSOD2	rGPX1	rGPX2	sSOD1	sSOD2	MDA1	MDA2	TANT1	TANT2	rCHE
±	±	±	±	±	±	±	±	/ ± /	/ ± /	/ ± /	/ ± /	
±	±	±	±	±	±	±	±	/ ± /	/ ± /	/ ± /	/ ± /	
±	±	±	±	±	±	±	±	/ ± /	/ ± /	/ ± /	/ ± /	
±	±	±	±	±	±	±	±	/ ± /	/ ± /	/ ± /	/ ± /	
±	±	±	±	±	±	±	±	/ ± /	/ ± /	/ ± /	/ ± /	

:sCHE

:TANT

:MDA

:sSOD

:rCHE

:rGPX

:rSOD

:sGPX

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