

VXOIRQ\OXUHD JURXS ,W LV D FRPELQDWLRQRI FXOWRPHWVXOXZBO GHWVROYMG I
FKORULPXURQ HWK\O DQG DGXOYDQW WK@VXUIDFH RI DOPL[WUHDWHG :
)LVK DUH PRVW VHQVLWLYH WR WKH ZDV SUHSDUHG HRULPHQWV DQG ZDV LQVWD
OLIH VWDW\HUMRDO\ WISH RI DTXDWLF SROOXWLFH LQVXODWLY EDVHG RQ &KDWWR
DJULFXOWXURJCE\ GLVFKDUJHhZ XH QXV UHDFWFG DQGLDRIW ZHUH UHFWDQJXODU LQ VKI
PDQXIDFWXULQJ LQGXVWULHV LQWR QDWXUDO ZDWHUZZDV PLJKW HQGDO THU WKH
)VKSRSXODWLRQ DQG RWKHU IRUPV RI DTXDWLFH DQG VPD\ ERORJEDPERR &DJ
ORQJ MHLFROVWKH HQYLURQPHQW E\ FKDQJLQ\ WKH UDFHG E\ WZR W\SHV RI 39 & C
7LODZLARFKQRBWLAN\VKZDWHU VXUIDFH IHGLOJPPORRORJLFDO YDOXHV RI SRQG
)VKEHORQJ WR WKH HDVUZ &DFWOLSDMXUH\XLFNOLDFDQV W\SHV DV IRORZV WHPSHUDW XUH
EUHGG HDVLO\ ZLWKRXW LQGXFHPHQW ZHUH DV IRORZV WHPSHUDW XUH [LF s
HvHFRGLVHURVWKHU DJURVGRMLFDQVSHHQV HOHFWULFDO FRQGXFWLYLW\ s
LQFOXGLQJ WLODSL ZHUH UHSRUWHG E\ YSULRXV\ DXWKRU\ GLVVROYHG R\JHO GHV
ODERUDWRI\ FRQGLWLRQ EXW OLPLW DQGLDRIW LQ RQ DOPL[WR[LSDWLVV
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VSHFLV\HURWKH SUHVHQW VWXG\ LV FRQFHUQHG ZLWK PJ / QLVUDWH QLWURJHO
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DOPL[KHUZLARSKURRLVQSDRMLFXODU VHOVLWLYH RUJDOV
OLNH JLOO OLYHU DQG NLGQH\ DQG FRPSDUHG WKH H\VLKQV DV DUNHU XG
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PRQLWRULQJ WKH DSSOLFDWLRQ RI WGLD DRIWUHDVHG LQ DQK P DQGLDRIW
HQYLURQPHQW DTXDULXP WKUHH DTXDUL IRU FRQURO
/ FDSDFLW\ 6XEOHWKDO GRVH RI

0DWHULDOV DQG 0HWKRGV

&KHPLFDOV

\$OPKHUELFLGH ZDV SXUFKDVHG IURP SROOXWLFH LQVXODWLY WHPSHUD
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JUDGH ZHUH SXUFKDVHG IURP OHUFN\ SROOXWLFH LQVXODWLY WHPSHUD
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0XPEDL ,QGLD PJ / DV & DZGLXP s PJ / SRWDVV
PJ / RUWKRSKRVSKDWH s PJ / DPL
PJ / QLWUDWH QLWURJHO s PJ

)LVK

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OLJKW K GDUN \$YUDJH YDOXH RIDQWKH SHULPHQWVHUJ DQXUDPHVKHLOO
DFFOLPDWLDWLRQ SHULRG ZHUH DV IRORZV WHPSHUDW XUH [LF s
S+ s HOHFWULFDO FRQGXFWLYHDFWURQ PLFURWFSLFWWVQ
GLVVROYHG VROLGV s PJ / GLVVROYHG R\JHQ s
PJ / WRWDO DONDOLQLW\ WRWDO KLVUDWRJLFDO VWXG\
s PJ / DVVRODGLXP s PJ / SRWDVLLXP
s PJ / RUWKRSKRVSKDWH s \$VHGLVHURVWKHUHQYLURQPHQW
QLWURJHO s PJ / QLWUDWHQLWURJHOVWLRQPJRUVHURVWKHUHQYLURQPHQW
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0XOWLSOLFDWLRQ)DUP &560) SUHPVHURVWKHUHQYLURQPHQWVWLRQZLWV
WUDQVIHUHQWR ODERUDWRI\ DTXDULXPWLRQ ZHUH IRORZV WHPSHUDW XUH [LF s
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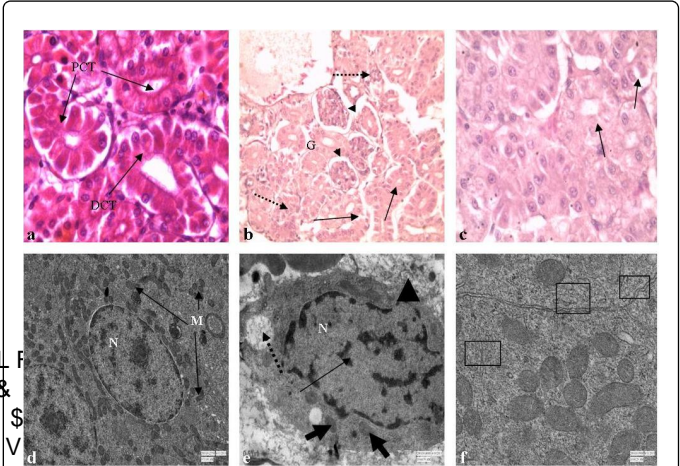
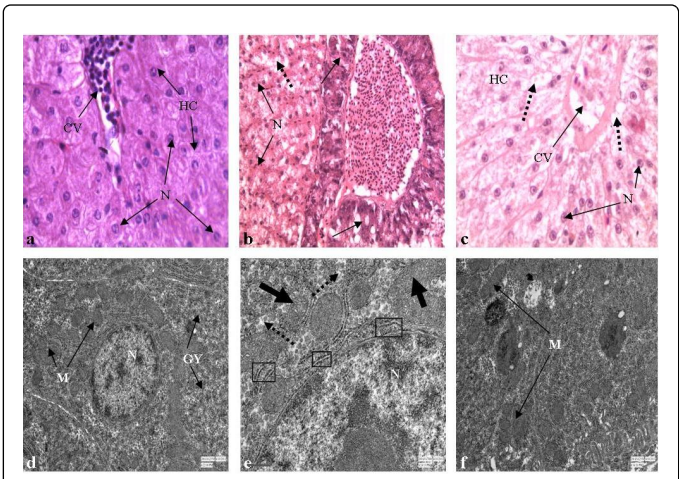
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)LHOG H[SHULPHQWDO GHVLJQ

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WKUHH VHSUDWH FDJHV DQGLDRIW LQ RQ DOPL[WR[LSDWLVV
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DSSHDUDQFH RI F\WRSODVPLF YDFXR0DWLRQV LQ XHM SLDWVWKWFDVSRDODU\ HSLWKHO
DVHDOPL[H[SRVXUH LQ ODERUDWRU\ F\QGRWQRSGD E\VIHHZLQWGHUGLZ(L0DWLRQV
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RWKHU KDQG KESDWRQFVWUHQZHUHDWUHQURQWREKRRGULSK DOPRVWUHQURQWREKRRGULSK
DSSHDUDQFHRIQGRWQRSGD E\VIHHZLQWGHUGLZ(L0DWLRQV



)LJXUH+LVWRSWDWKRORJLFD0 SKRWRPLF
QLORWQGHU FRQWURO FRQGLWLRQ &
FRQGLWLRQ \$/)DORQGLWLRQHG)
QRUPDO DSSHDUDQFH RI KHSDWRF\WHV
DURXQG FHQWUDO YHLQ &9 ZLWK GLVWLQFW QXFOHXV 1 XQGHU OLJKW
PLFURVFRS\ & TM % 6KRZLQJ GH)H)XUHDWLRQVSRDWRSDDFOHSKRWRPLFUR
DUURZ VHYHUH YDFXR0DWLRQ LQ F\WRSODVPLF XHQSDWFRQWURORFRIHQGLWLR
DUURZ XQGHU OLJKW PLFURVFRS\ \$/ FMRQGLWLRQV)DORQGLWLRQHG) D
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DQG K\SHUWURSKLHG QXFOHL ZKLWH D\URZ % 37 PDQDV FDSV6KRZLQJ DQG JORPHUXO
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QXFOHXV 1 DQG 5(5 \$) TM

.LGQH\

+LVWRORJLFD00\ NLGQH\ LV PDGH XS RI D ODUJH QXPEHU RI QHSKURQV
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