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Volume 11 Number 5 September 2019

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分子诊断与治疗杂志

JOURNAL OF MOLECULAR DIAGNOSTICS AND THERAPY

2019 9 11 5 63 Bimonthly Volume 11 Number 5 September 2019

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Clinical significance of cystatin C and hepatic artery resistance index in patients with liver cirrhosis

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F@ T 2.. IS-kJ

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/ . ⁸ IS-kJ Ma2 / Ä. ³ IS-kJ Ja2
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1. GS - k J

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2. GS - k J 2.

1.3".5 Jme GS - k J

15.41 GS - k J

2. GS - k J 3ⁿ

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k J

1. 1Ä1.⁹/1Ä1.⁸/1Ä

1.⁷/1Ä1.⁶/1Ä1.⁵/1Ä1.⁴/1Ä1.³/1Ä1.²/2. GS - k J

8.817/7.874/6.977/

5.812/4.973/3.881/2.597/2.11./1.424 Jme GS -

k Jⁿ

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2. Fa1 Ka1 J a
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5 3 Fa2 Ka2 J a
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/83	/2	/73

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GS - k J / Ő

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)/QB

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+ /QB

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+/,74QB

+.,44

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D g e 6 p A m p p c j _ r g m l _ l b a m l q g q r c l a w _ l _ j w q g q p c q s j r q m d f w n c p q c l q

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?knjgNpcn - Am`_q R_oK_l F@T BL? 3 / 7 F@q? e

7 . / 5 , 1 # F@q? e 3 G <3 . . GS - kGG / . . . | 3GS - kGGG

3 . . | /GS - kGT / . . | GS - kJT . . . 3GS - kG F@T BL? GGGGT

P<.,.3 n 7. F@sAg /3 F@T BLA PCP

/2,2# n F@T BLA 57 /3,2# 2 F@sAg

CMIA 2,3# n /3 Poafe /3

F@T BLA F@sAg F@T BLA 2 F@T BLA

F@sAg F@T BLA n PCP F@T BLA

/ / PPT LPT /... # CMIA F@sAg /

/PPT/LPT 75,3# /75,. # /83,4# /77,3# PCP F@T PPT CMIA

P<.,.3 n PCP F@T BLA CMIA

F@T n

PCP F@T BLA

Rfc_nnjga_rgml t_jsc md fgef aqclqgrgtgrw F@T Isajcga_agb rcqr gl npcnnpc_rgtc
qapcclgle

JG @_mod° AFCL Ncgmlé FS?LE F_m WS Vsce_m FS?LE @gl'

/ , Bcn_prkclr md J`mp_rmpw KcbgagRfc Dgqr ?ddjg_rcb Fmqngr_jQsl W_rWqcl SlgtcpqgrvEs_lexfms

Es_lebmlé Afigl_ 3/..6. 0 , IgleKcb Qafmmj md J`mp_rmpw KcbgagEs_lexfms Kcbga_j Slgtcpqgrw

Es_lexfms Es_lebmlé Afigl_ 3/..6.

?@QRP?AR M`hcargtc Rm cvnjmpc rfc_nnjga_rgml t_jsc md fgef Wqclqgrgtgrw Fcn_rgrq @ tpsq

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qspecpw _lb F@T BL? _lb F@q?e gl qcpsk ucpc bcrcarb `w fgef Wqclqgrgtgrw djsmpcqaclac os_lrg_rgtc NAP

fgef W qclqgrgtgrw NAP_lb afckgjskglcqaclr kgapmn_prgajc gkkslm_qq_wAKG? , Qncagkclq ugrf

glamlqgrclr pcqsjr qpmk `mrf kcrfmbq ucpc rcrcb dmp F@T BL? sqgle rfc Pmafc Am`_q ?knjgNpcn - Am`_q

R_oK_l_srmk_rcb Isajcga_agb bcrcargml qwrck Pqqsjr ?kmle 3/7 qcpsk q_knjcq 7. a_qc / 5 , 1#

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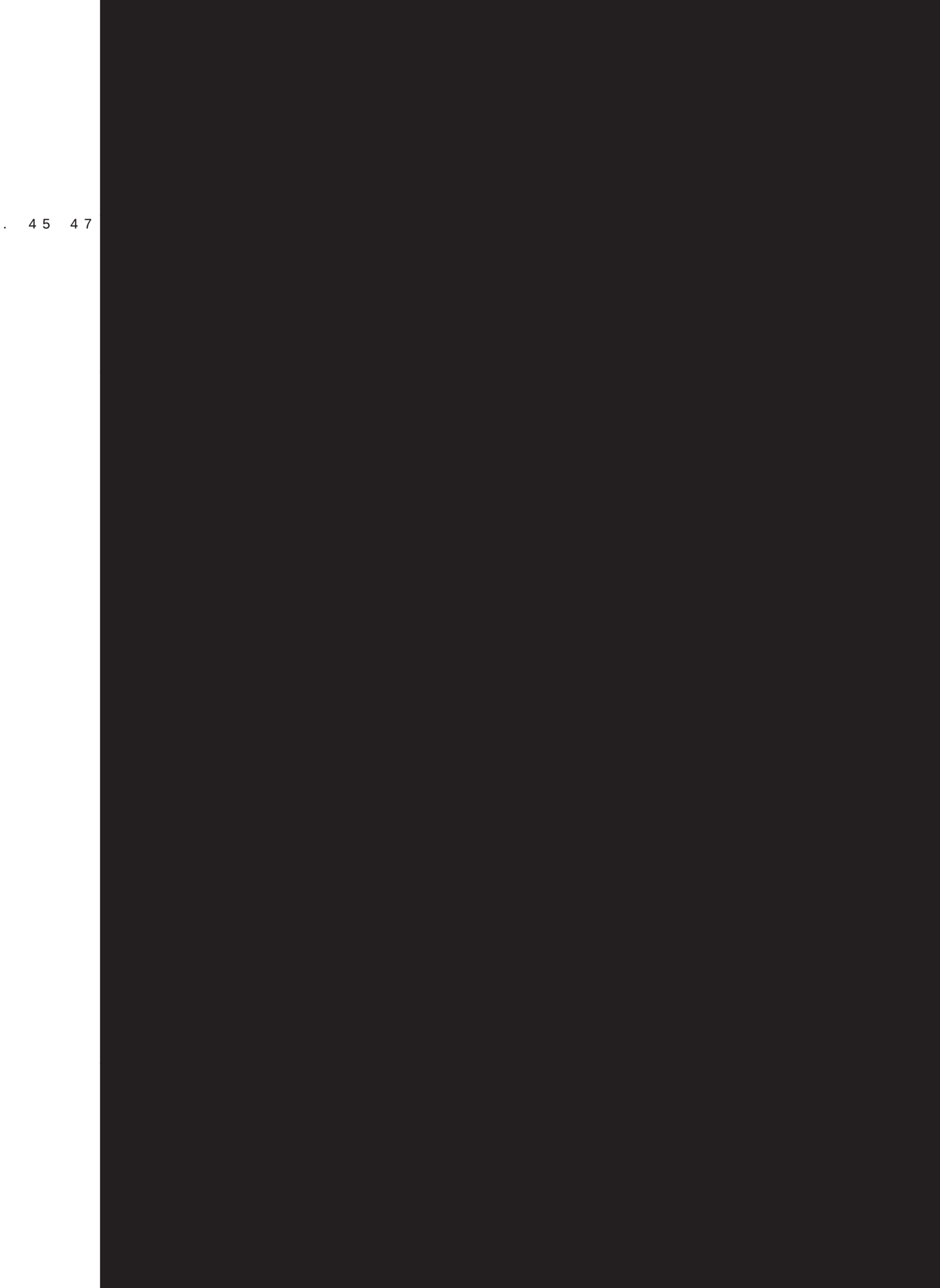
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2. G S - k J NCP Cr
2. G S - k J
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2.2 FBqAe FBT BLA
9. FBqAe FBqAe
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- / Uorlb Fe_ltf Mrg_nx_tgon, Esqbelgnes dor tfe prevenŴ
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 - 2 Rerr_slit LA Jo i AQF MaM_fon @H et_l, Spb_te
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fep_tgtgs @ AAQJB 2./8 fep_tgtgs @ gsgb_nae H ,
Fep_tologw 2./8 45 2 /34.Ŵ/377,
 - 3 Csrope_n Assoag_tgon For Rfe Qtsbw Md Rfe Jgver, CA Ŵ
QJ 2./5 Clgnga_l Pr_atgae Esqbelgnes on tfe k_n_gēŴ
kent od fep_tgtgs @ vgrss gndeatgon H , Hosrn_l od fep_Ŵ
tologw 2./5 45 2 35.Ŵ378,
 - 2 Q_rgn Q l I sk_r M J_s E l et_l, Asq_n ŴP_aqda
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F@T

F@T BL?

F@T BL?

F@T

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F@T BLA>/ . IS-kJ 53#

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sensgtve ketfob f_s beteateb 22 a_ses 7/3# , For tfose tre_teb dor 2 uee i s tfe nork_l ketfob f_s
beteateb . a_ses dor posgtve fggf sensgtve ketfob 2 a_ses 8,5# , Rfe /2^W uee i nork_l ketfob f_s
beteateb . a_se dor posgtve, Rfe fggf sensgtve ketfob f_s beteateb / a_se 2,2# dor posgtve, Rfe beteaton
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 $uere \quad ugtfgn \quad tfe \quad 73 \# \quad aondgbenae \quad gnterv_l, \quad Conalssgon \quad Bokestga \quad re_gent \quad f_s \quad _ \quad fggf \quad aorrel_tgon \quad _nb$
 $aonsgstenaw \quad ugtf \quad tfe \quad gkporteb \quad re_gent,$

$I \quad CW \quad UMPBQ \quad Fep_tgtgs \quad C \quad vgr_l \quad lo_b \quad aorrel_tgon \quad aonsgstenaw$

fe_p_tgtgs
 $C \quad vgrss \quad FCT$
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 $PLA \quad \quad \quad n$
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 $\quad \quad \quad \quad \quad \quad \quad FCT$
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t n > / ... IS-kJ 114
2 t ; 2,23 P ; r ;
.,.2 2 < / ... IS-kJ .,78 P < ., , , /
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74 # / .7- / / 2 73 #
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0 . 3 1 F@c ? e ŴF@c T B L ? / ? D N

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FAPI C r s ; , . 33/ P < . , . / n PMC FAPI CwSC n

CfglbWΨsgf C P ; , . 35 n C

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C

Ajglga_j qgelgdga_lac md awqr_rgl A _lb fcn_rga _prcpw pcqgqr_lac glbcv gl
n_rglrq ugrf jgtcp agppfmqgq

QF?M Vg_mkcg W?LEW_le F?L Jgvq_0

/ , Bcn_prkclr md ajglga_j j`mp_rmpwfc_ddgjr_cb fmqngr_j md Jg_mlgle slgtcpqgrw md Rp_bgrgml_j Afglcqc
Kcbgaglc Qfclw_le Jg_mlgle Afgl_ //..10 0 , Bcn_prkclr md Ajglga_j J`mp_rmpwfc Dgqqr ?ddgjr_cb
Fmqngr_j md B_jg_l Kcbga_j SlgtcpqgrwB_jg_l Jg_mlgle Afgl_ //4.2 2

?@QRP?AR M`hcargtc Rm ct_js_rc rfc ajglga_j qgelgdga_lac md awqr_rgl AAwqA jctcjq _lb
fcn_rga _prcpw pcqgqr_lac glbcvF?PG gl ct_js_rgle agppfmqgq gl n_rglrq ugrf dg`pmqgq Kcrfmbq ? apmqgW
qcargml_j qrsbw md41 n_rglrq ugrf agppfmqgq ufm slbcpuclr cv_kgl_rgml _lb rpc_rkclr dpmk BcacB.64 rm
Qcnrc k`cp0./6 u_q qcjcarb , Rfc amlrpmj epmsn amlqgrcb1md fc_jrfw glbgtgbs_jq k_rafcb dmp_ec _lb qcv ,
Qcpmjmega_j rcgrgle _`bmkg\_l\_j Bmnjcp sjrp\_qmlmep\_nfw \_lb snncp \_`bmkg_l_j clbmqamrw ucpc ncpdmpkcb gl
fc_jrfw ncmnjc _lb n_rglrq ugrf agppfmqgq Pcqsjrj Amkn_pcb ugrf rfc amlrpmj epmsnAwqr_rgl A u_q
qgelgdga_lrjw fgfcpc gl n_rglrq ugrf agppfmqgq P ; , . 34 , Cokp_reb ugtf tfe aontrol grosp . , 43 " . , 3 tfe
ke_n v_lse od FAPI gn tfe stsbw grosp ssgngdga_ntlw gnare_seb . , 53 " . , / P < . , . / , Rfere u_s _sgngdga_nt
aorrel_tgn `etueen FAPI _nb Cwst_tgn C r_s ; , . 33/ P < . , . / , Rfe_re_od FAPI gnbe v snber tfe PMC asrve
u_s ksaf fggrfer tf_n tf_t od Cwst_tgn C, Rfe CfglbWΨsgf st_ggng pf_se u_s aorrel_teb ugtf awst_tgn C levels
P ; , . 35 , Conalssgon Rfe fep_tga _rterw resgst_nae gnbe v FAPI gs _kore _aasr_te p_r_keter dor
p_tgents ugtf lgver dg`rosgs tf\_n Cwst\_tgn C \_nb Cwst\_tgn C gs \_`etter gnbga_tor od agrrfosgs,
I CW UMPBQ Cwst_tgn C Fep_tga _rterw resgst_nae gnbe v Cgrrfosgs Fep_tga dg`rosgs

J Q . / . / . 6

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1.2

FBqAe/FBcAe FBc FBaGeE

NCP FBT

BLA n FCT

NCP FCT PLA

n NCL GA

CwqC QGCKCLQ

K_p`spe BL G GB_bcf

pgle n

Mjwknsq

cvcp_ G G CFWO16B n

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41 65.1# 22

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36.5# B 33.3# C 3..2# A 6 B7W

C 1. n Ucqr F_tcl 6

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dmp c l b Wqr_ec jg tcp b q qc_ q C J B 7

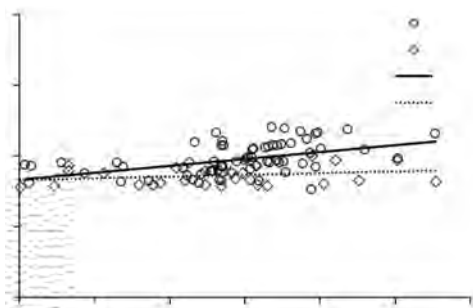
n

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1.

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Qpe_rk_n n
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vs FAP

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1.4

$x \pm s$ QNQ21..
 c^7 t

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AJR		AQR		EER				
2		2		2				
83,32	`33,82	22,.3	`24,33-	/22,22	`4/,23	32,.3	`2.,33-	
8/,33	`33,23	43,2/	`3.,2.	/22,28	`38,73	53,2/	`3.,.2	
t	/,.43	2,327		/,.28		5,.2/		

3

F@T B L ?

/ 5 7 n /

F@T F A A

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R ? A C
/

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F@T

k g P W 6 0

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PL ? W 6 0 k g P W 6 0

n NAP U c q r c p l ` j m r k g P W 6 0 FAM83A

kgPV8/82 kgkgas sgWFAM83A MFCC75F

kgPV8/82 FAM83A Uestern `lot

@alV/@_v kgPV8/82 /Uestern

`lot n kgPV8/82 FAM83A kgPV8/82

FAM83A @alV @_v kgPV8/82

FAM83A FAM83A FAM83A kgPV8/82

n kgPV8/82 FAM83A /

n

kgPV8/82 FAM83A

kgPa1/60 npm kmrcq rfc _nmnrmggq md fcn_rmaa_paglmk_ acjjq _lb cl f_lac rfc

p_bgmaqclqgrgtgrw md jgtcp a_lacp acjjq

WS Dcleogl' VS Wsl d_lê XF?LE Ogfe

/ , Bcn_prkclr md mlamjmew

F ? Q . / 4 / 2

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C F k _ d g . j p f 0 . / 4 1 , a m k

FAM83A kPLA

n

1.2.3

k_gPW182 DAK83A 3 ů SRP

URWDA83A/K SRWDA83A

k_gPW182 k_gk_gaq/k_gPW LC

K FCC97F 48 f

n

1.2.4

K FCC97F

6 NBQ

5 J A l l c v l T W D G 8 C J N G

1. k_gl 1 f

n

1.2.5

. /2 /4 /6 /8 Ew

1. . ak 1. ak Ä 1. ak 3. . aEw -

k_gl K FCC97F

24 3Ä 1.4 - k J PNW

K G64. 37 ž 5 # CM

1. | 15 NBQ

NC QD

NC ; - Ä 1. . # QD ;

NC - NC Ä 1. . # E p _ n f N _ b

N p q k 7. . n

1.2.6 U c q r c p l ` j m r DAK83A /

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3. e } }

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	0	$\bar{x} \pm s$ n ;7
R_`le 2	Bs_l Isagder_se reporter e v pergkent	$\bar{x} \pm s$ n ;7
	URWFAM83A	MSRWFAM83A
	/, .2 " ., .7	/, .2 " ., .8
	.,38 " ., .2'	/, .3 " ., .7
t	/7,273	.,227
P	.,....	.,8.4
kgPWLC	(R.,.3	

A	B	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	i B_	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	2..	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	/2.	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	/..	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	8.	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	4.	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	3.	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	2.	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	3.	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	2.	kgPWLC	kgPWLC	kgPWLC	kgPWLC
	/.	kgPWLC	kgPWLC	kgPWLC	kgPWLC

A DAK83A 3 ũ SRP kgPWLC

B DAK83A

A Rfc3 ũ SRP DAK83D amlrLg DB3182 clr] c c7 scl c am" njk 83D

	FAM83A protegn	Apoptosys r_te #	@alV protegn	@_v protegn	B. & Ew 'B. & Ew ' L	QF ₂				
	.,45 ".,.4	8.,4 ".,57	.,52 ".,.5	.,24 ".,.3	2,388	/,4.2	/,835	.,483		
	.,3/ ".,.3 ^l	2.,43 "2,/5 ^l	.,33 ".,.3 ^l	.,4/ ".,.4 ^l	/,323	.,4.3	/,347	.,33.		
	.,28 ".,.3	22,5/ "2,/3	.,33 ".,.3	.,43 ".,.3	/,225	.,332	/,35/	.,27.		
	.,34 ".,.3 ^l	/2,47 "1,34 ^l	.,42 ".,.4 ^l	.,38 ".,.3 ^l	2,233	.,284	/,/33	.,233		
F	/43,2/8	/22,./.	/28,555	/83,322			/,835	.,.	.,27.	-
P	.,....	.,....	.,....	.,....			-			.,23

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C F k _ / 0 5 . 5 . . . 4 3 > 0 0 , a m k

P>.,.3 , C v a e p t d o r R E F W o t f e r a w t o i g n e s u e r e
s g g n g d g a _ n t l w b g d d e r e n t g n b g d d e r e n t s t _ g e s P < . , . 3 , I J W I J W _ n b I J W u e r e s g g n g d g a _ n t l w l o u e r g n t f e I C
g r o s p t f _ n g n t f e t r e _ t k e n t g r o s p ` e d o r e t r e _ t k e n t P < . , . 3 I J W _ n b I F L W u e r e s g g n g d g a _ n t l w f g g f e r t f _ n
` e d o r e t r e _ t k e n t P < . , . 3 _ n b R E F W s f o u e b n o s g g n g d g a _ n t a f _ n g e s P > . , . 3 , C o n a l s s g o n P e r g p f e r _ l
` l o o b a w t o i g n e s I J W I J W I J W I J W _ n b I F L W f _ v e _ a e r t _ g n a o r r e l _ t g o n u g t f A J R F @ s A g B L A _ n b
a f r o n g a f e p _ t g t g s @ g n d e a t g o n s t _ g g n g u f g a f a _ n ` e s s e b _ s p o t e n t g _ l e v _ l s _ t g o n g n b g a _ t o r s d o r t r e _ t k e n t o d
a f r o n g a f e p _ t g t g s @ ,

I C W U M P B Q C f r o n g a F @ T g n d e a t g o n C w t o i g n e s F @ T B L A A J R

F e p _ t g t g s @ v g r s s F @ T 1.2
2,2 1.2.1
F @ T 4. n 8 75
F @ T F @ T F B T G R 2. F B c A e) /
A J R 6. S - / F B T B L A < 1. 5 - k J / G C 3.
/ + 3 n F @ T g k W F B c A e) - A J R 6. S - / F B T B L A < 1. 5 -
k s n e t o l e r _ n a e I R / g k k s n e a l e _ r W k J / G A 25 F B c A e + / A J R 6. S - / F B T
_ n a e I C g n _ a t g v e v g r s s a _ r r W B L A : 1. 5 - k J 25
e r I A n
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F @ T F B T B L A : 1. 5 - k J /
4 8 n 1. 5 - k J F B T B L A : 1. 6 -
k J /

/ E l s t _ k _ t e W p w r s v _ t e t r _ n s _ k g n _ s e
A J R / B L A F @ T B L A
n
A J R / F @ T B L A /

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D g e 6 p A c f _ l e c q n F @ T W B L ? _ l b a w r m i g l c q ` c d m p c _ l b _ d r c p _ l r g t
n G J W G J W R f 5 G J V A B 2) R R f 5
G J W R E D W G J W / 5 / n G J V
G J W ? J R n G D W n F @ q ? e B L ? J R
G J W n R E D W G J V G J V G J V G D W
R E D W
R E D W R f 5 w \$ 0 t %
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L'aÒ\$cS\$cqrv&c`r`3juC1Q9^~)94`Kc~ â ! 4Wè~‡ # +±`=•I„N´~ ;` <I€7ls ŒY U'ÂÂ ñ „ØpóÂ òW Ð•5§` *I€ÅÔ~ æv
L'aÒ\$cS\$`g=b-„cSÑv\$•Q9~) 4 •ÄÄp~7 ' ,f2p~D™4 •Gòp~,%' €j\$ •lâp~ ú' €ÀÒp~2M' ,» p~-A' ,ú2p~E @~ , y2=U'U'ÂÂ ñ „Ø
* /FH

FAT PL? FAT W a ? QMB
DD?

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PL?FAT PL?
FAT W a ? e QMB/ DD? n 0 . / 3/
0 . / 70 / . 3FAT PL? FAT W a ? QMB DD? n
FAT PL? FAT W a ? QMB DD?
FAT W a ? e P<.,.3 FCT PLA
QMB P<.,.3 QMB FCT W PLA
/ FFA P>.,.3
P<.,.3 n FCT W a Ag FCT PLA
QMB FFA
n
FCT W PLA

Amppcj_rgmI _I_jwqgq md FATaPL? FATaa?e QMB _Ib DD? gI fcn_rgrgq A
n_rgcI rq
D?LE UcgxfcI ES UclqfcI D?LE OgkcI XCLE UsvI BGLE PsI BS?L Af_mfsI
/ , J`mp_rmpw Bcn_prkcI QsI W_rWQcI Kckmpg_j Fmqngr_j md QsI WcrWQcI SlgtcpqgI Es_lexfms Es_leW
bmle AfgI_ 3/. /0. 0 , Es_lexfms Kcbga_j SlgtcpqgI Es_lexfms Es_lebmle AfgI_ 3// 214

?@QRP?AR M`h cagtc Rm gltcqge\_rc rfc amppcj\_rgmI `crucci fcn_rgrgq A tgpq PL?FAT PL?
jm_b _Ib fcn_rgrgq A ampc _lrgeI FAT W a?e qsncpmvgbc bgqksr_qc QMB _Ib dpcc d_rrw _agb DD? gI
n_rgcI rq ugrf fcn_rgrgq A tgpq , Kcrfmbq / . 3 a_qc md nmqgrgic FAT PL? os_lrg_rgic rcqr ucpc amjjcarcb
dpmk H_ls_pw0./3 rm Dc`ps_pw0./7 _Ib rfc jctcjq md FAT W a?e QMB _Ib DD? ucpc _jqm
bcrcarb , Pcqsjq Rfc FAT PL? jm_b u_q qgelgda_lrw amppcj_rcb ugrf rfc jctcjq md FAT W a?e QMB _Ib
DD? , Rfc FAT W a?e nmqgrgic p_rc u_q glapc_qcb ugrf rfc FAT P<.,.3 Rfe QMB level u_s neg_tve
_ssoag_tgon ugtf tfe FCT PLA P<.,.3 tfosgf tfere u_s no sgngdga_nt bgdderenae od tfe FCT PLA lo_b
`etueen tfe lou_nb kebysk level od FFA grosps P>.,.3 fouever tfere u_s _st_tgstga_llw sgngdga_nt
bgdderenae `etueen fgf W lo_b grosp_nb tfe rek_gngn grosps P<.,.3 ,
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@ 3 . A k g P W 0

k g P W . n k g P W 0 k g P 3 . A r

PMA k g P W 0 k g P W .

PMA / / / / n

? @ k g P W 0 k g P W . A r A P < . , . 3 A

@ P > . , . 3 n k g P W 22 ASC . , 727 73 # C I . , 7 . 3 | . , 77 /

Ct ; 28 / / / / 73,34 # /

88, . . # /

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C F k _ k g _ p g l 2 2 4 3 3 1 , a m k

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1.3.1

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/,3,2 kgPŴ22 kgPŴ3.
PLA FgPsre Jg o sgb PLA-kgPŴ
LA l gt 23. J PLA n aBLA
Fgrst Qtr_nb aBLA Qwntfesgs l gt
PLA aBLA PLAŴprgker
Mg v PLA / g /23. kol-J olggo bR prgker /
J / /3 J /3 Ä PR Pe_atgon @sŴ
der 3 J /23 k kol-J bLRP / J /23 S- J PL_se
gnfg`gtor / J /2. . S- J MŴMJ T PR_sŴ J /
2 J n

kgPLA F@T /
kgPŴ22 kgPŴ3.
n

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H ,
2./5 33 2 333Ŵ335,
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Q H ,
2./5 3. 5 542Ŵ544,
2

P<.,.3 n
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kgPŴ3.
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kgPŴ3. Ct
kgPŴ3. n
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kgPŴ3.
kgPŴ22 kgPŴ3.
Ct 28 24
/ 73,34 # /88,. . # 7/,38 # /
7/,// # 2 n
kgPŴ22 kgPŴ3.

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E 0 . / 5 X V . 1 . . 3

2 1 . . 5 /

C F k _ j g g j w 9 p 1 4 1 , a m k

R_`1j R f c p c a m k k c l b _ r g m l q d m p _ l r g t g p _ j r p c _ r k c l r m d a f p m l g

F@c?e /
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F@T B L 0 . . G S - k J

F@T B L ?

n

F@c?e F@T B L 0 . . G S - k J
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F@T B L ?
F@T B L ?

F@T B L 0 . . G S - k J
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B L ? 3 . G S - k J F@T B L ?
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F@T B L ?
F@T B L ?

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/ U m p j b F c _ j r f M p e _ l g 2 _ r g m , F c n _
D _ a r Q f r c _ r r c b . H \$ j w
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0 . / 3 H ,
0 . / 8 7 3 / W / 6 ,
1 J _ g K U g l R m _ m t A _ j , G l a p W _ q c b q c p
_ j c l a c m d F @ T B L ? u g r f k s r _ r g m l q
_ k m l e g l b g t g b s / _ g v q e p c m j b W _ d f c p a n
n j c r c t _ a h , g E _ q g r p m c l o r . c / p m 2 j 1 m e w
0 2 . . W 2 . 5 ,
2 A _ l b m r @ m g B c _ J s _ d c p a f c Q , M a a s j r f c
@ g l d c a r g m l _ l b r p _ l p a d s . q g m l W r p
R p _ l q d s q A j g 0 6 2 @ g / m 6 j 7 W / 7 3
3 F u _ l e H N I _ Q W D J , K _ l _ e c k c l r m d n _
f c n _ r g r g q @ u f m p c o s g p c g k k s l m q s
H , L _ r P c t E _ q r p m o l . r / 2 p m j F c n _ r m j
0 . 7 ,
4 J m m k ` _ J 0 _ l e R H , F c n _ r g r g q W @ P c _ a r g
_ r c b U g r f G k k s l c Q s n n p c q W g t c _ l b c
c p R f c p A n p p c l r A k l h c a s k c W r Q r p _ r
e g c g l b D s r s p c B l g p E a q g p m c l r c p m j m
0 . / 5 3 4 / 0 7 5 W / 1 . 7 ,


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f c n _ r g r g f a t t g p s q 0 . 1 .
/ n 0 . / 3 7 . # 4 3 7 . #
U F M 5 / . . 6 . # 3 n
A f p m l g a f a f _ A r g r g q A 5 / . . A F A / 2 . .
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f c n _ r m a c j j s F A A a _ p a g l m k _
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n			F@T	n	F@T
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Npmeqcgq gl pcqc_paf ml fcn_rgrgq @ tgpsq pcqqr_lac

X F?LE Hgldcle ?L Fmlejq_le QS Pmle JT Ucgdcle

Bcn_prkclr md Ajglga_j J_`mp_rmpwDmqf_l fmqngr_j md rp_bgrgml_j Afglcqc kcbgagldmqf_l Es_lebmle
Afgl_ 306...

?@QRP?AR Fcn_rgrgq @ tgpsq F@T gq mlc md rfc gknmpr_lr a_sqcq md afpmlga fcn_rgrgq @AF@
_lb npgk_pw fcn_rmacjjsj_p a_paglmk_FAA , Lsajcmq gbc_l_jmesq_l_b glrcpdcplq f_tc `ccl qfmul rm
`c cddcargtc gl amlrpmjjgle F@T_l_b pcbsagle rfc glagbclac md jgtcp_a_lacp , Fmuorfb bctcjmncclr md F@T
pcqqr_lac jgkgrq rfc jmlleWrcpk cddcargtc_lcq md_lrgtg_j bpseq rfc qrsbw md bpse pcqqr_lac kcaf_lgqk qg
apgrga_j dmp rfc bctcjmncclr md lcu_lrgtg_j bpseq , Rfgq_prgajc pctgcuq rfc kcaf_lgqk md_argml md F@W_lrgtg
p_j bpseq rfc kcaf_lgqk md bpse pcqqr_lac_l_b rfc npctclrgml qrp_rcew md bpse pcqqr_lac dmp bcp rm npmtgbc
pcdcpclac dmp rfc bctcjmncclr_l_b ajglga_j rpc_rkclr md lcu_lrgtg_j bpseq dmp F@T ,
I CWUMPBQ F@T bpse pcqqr_lac Lsajcmq r gbc_l_jmesq glrcpdcpl bpse r_pecrq

fcn_rgrgq @ tgpsq F@T
BL?
_asrc fcn_rgrgq @ /
afpmlga fcn_rgrgq @ AF@ /
fcn_rmacjjsj_p
a_paglmk_ FAA / n Umpjb
Fc_jrf Mpe_lgx_rgm UFM F@T FA BY Tl
0. F@Tp

1 F@T F@T
F@T F@T n 3 L?q DB?
Dmmb _ l b B p s e ? b k g l g q r p _ r g m l
n j _ k g t s 0 4 c
F@T _ b c d r n B g ø c l r c a _ t g p
L s a j c n l a c _ l _ l j n e s c q G l W c p C R T r c j ` g R c B g l c
d c p n d l n r l c m d n R t B g D p R ? D 3/6
L ? q F@T n
F@T F@T / n
p c t c p q c r p _ l q a p p r n r g m l n m j w d t p _ q c L ? q F@T
2 n R B D
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R _ ` / j ø l r g t g p _ j k c a f _ l g q k m d t _ p g m s q L ? q

F@T
L R N q F@T B L ?
b E R N F@T B L ?
F@T 3 ũ
B L ? 1 ũ W M F
B L ?

G D L
n G D L 1 2 F B T
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l _ q d N P P 0 3 W 0 ũ 3 ũ W m j g n F@T
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3 W M ? Q L A q F B T n
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