:KHUH,&LWLDO &RQFHQWUDWLRQ EHIRUH 7UHDWPHQW =HUR 7LPH

5& 5HVLGXDO &RQFHQWUDWLRQ DIWHU 7UHDWPHQW DW HDFK ([SRVXUH
7LPH

5HVXOWV

,VRODWLRQ DQG FKDUDFWHUL]DWLRQ RI LQGLJHQRXV EDFWHULD

&RORQ\ PRUSKRORJ\ DQG WKH PLFURVFRSLF FHOO H[DPLQDWLRQ DV ZHOO DV
*UDP VWDLQ UHDFWLRQ RI WKH SXULILHG EDFWHULD GDWD QRW VKRZQ UHYHDO
WKDW WZR RI WKH LVRODWHG LQGLJHQRXV EDFWHULD ZHUH *UDP SRVLWLYH URG
5] DQG 5] DQG WKH UHVW ZHUH *UDP QHJDWLYH URGV $FFRUGLQJ WR WKH
$3, ELRFKHPLFDO SURILOHV 7DEOH LQGLJHQRXV EDFWHULD ZHUH PRVW
SUREDEO\ DIILOLDWHG WR JRVHLXGRPSROHFLHVH SODFDX GLQJ
5] 5] DQG(5] HUREDFWHU 5DJJOHPELUHDQOVD
SQHXPR5]LD 6DOPRQHOO 5D DDQJFRFRROOQHULV
5]

Bacterial Code	API Identification
	(QWHUREDFWHU äDHUÃFÃRPHUDQV
Ü:F	(FORDÃHDÃ
	3VHGXRPRQDV äDÃFÃSDFLD
Ü:G	3 PDOWÃDRSÃKÃLOLD
Ü:H	6DOPRQHOOD DUL]RQDH
Ü:I	.OHEVÃOÃOD ÃR[\WÃSÃRFÃJÃ
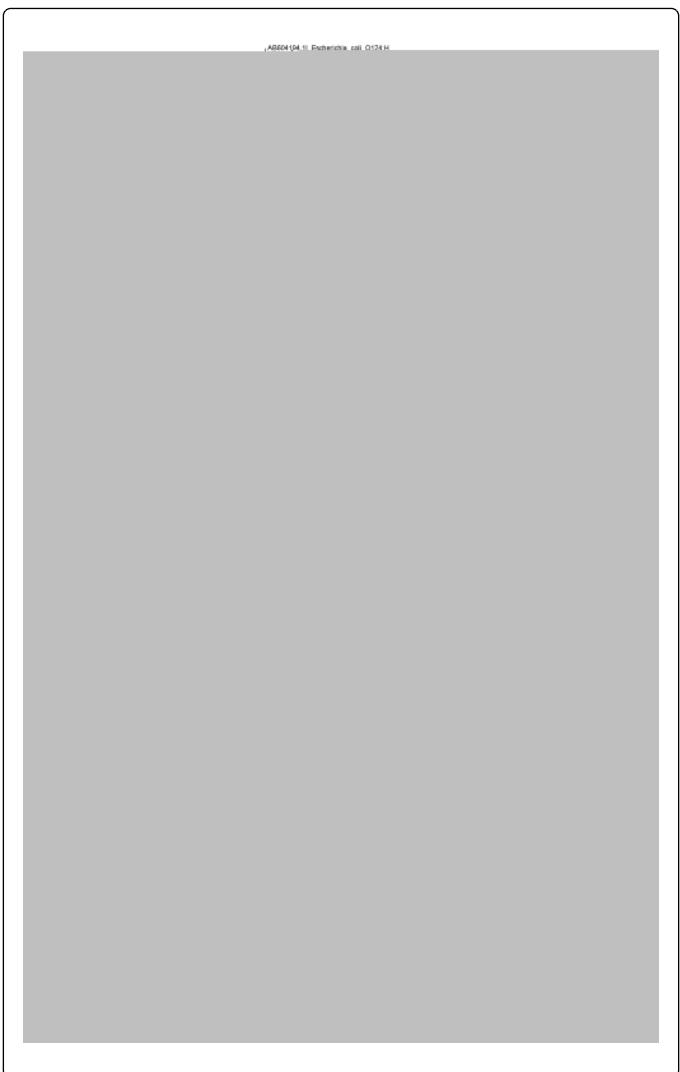
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ZHUH FDOFXODWHG XVLQJ WKH .LPXUD PRGHO XVLQJ 0(*$ VRIWZDUH
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'LVVROYHG R[\JHQ '2

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LQFUHDVLQJ H[SRVXUH WLPH FRPSDUHG WR WKH FRQWURO XQ VHHGHG
ZDVWHZDWHU 7KLV LV PDLQO\ GXH WR LQFUHDVH '2 FRQVXPSWLRQ GXULQJ
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5]   DQG ILQDOO\ WKH FRQWWKROO RZLWKGWKHROHRZSRWWXUDFKLHYHG
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%LRFKHPLFDO R[\JHQ GHPDQG %2'

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WKH %2' ZLWK GLIIHUHQW SURSRUWLRQV 36 DQG WKH PL[HG FXOWXUH
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WR WKH ZDVWHZDWHU FRQWDLQHG WKHP 5] DQG 5] UHSUHVHQW WKH PRVW
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ZLWK WLPH LQ WKH FRQWURO ZDVWHZDWHU UHDFKLQJ WKH KLJKHVW OHYHO
DIWHU GD\V

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6 ZLWK WKH OHDVW 5(UHFRUGLQJ   DQG
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DQ\ UHPRYDO EXW H[KLELWHG %2' DGGLWLRQ L H   IROG RI WKH LQLWLDO
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)DW RLO DQG JUHDVH)2*

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IROORZHG E\ WKH PL[HG FXOWXUH 36 DQG ILQDOO\ 6   DQG
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FRQILUPLQJ WKH DELOLW\ RI WKH ELRDXJPHQWDWLRQ RI EDFWHULD

7RWDO FROLIRUPV 7& DQG IHFDO FROLIRUP)&

6LQFH WKH SUHVHQW VWXG\ GHDOV ZLWK GRPHVWLF ZDVWHZDWHU WRWDO DQ
IHFDO FROLIRUP 7& DQG)& DUH WKH PRVW LPSRUWDQW TXDOLW\ SDUDPHWHUV
GXH WR WKHLU HIIHFW RQ WKH UHFHLYLQJ ZDWHU ZLWK WKHLU SDWKRJHQLF ORD
7KH\ DOVR GHWHUPLQH WKH HIILFLHQF\ RI WKH WUHDWPHQW SURFHVV
(OLPLQDWLRQ RU PLQLPL]DWLRQ RI 7& DQG)& FRXQW LQGLFDWHV HIILFLHQW
WUHDWPHQW ZKLOH LQFUHDVLQJ 7& DQG)& LQGLFDWHV WKH RSSRVLWH 5(RI
7& DQG)&)LJXUH % DQG & ZHUH SRVLWLYHO\ FRUUHODWHG ZLWK WLPH LQ
DOO VHHGHG ZDVWHZDWHUV ZKLOH DEVROXWHO\ QR UHPRYDO ZDV UHFRUGHG LQ
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GLUHFWO\ DIIHFWHG LWV SHUIRUPDQF... DQG ... EDFWHULD ... PLQLPXP ...
VDPSOH VKRZHG WKH RSSRVLWH WUHQG... ZKHQ FRQWLQXRXV ... QXPEHU ...
VWDUWLQJ IURP DIWHU RQH GD\ WR DIWHU GD\V DQG FRQWLQXRXV
LQFUHDVH LQ WKH)& UDQJHG EHWZHHQ D PLQLPXP RI DQG PD[LPXP
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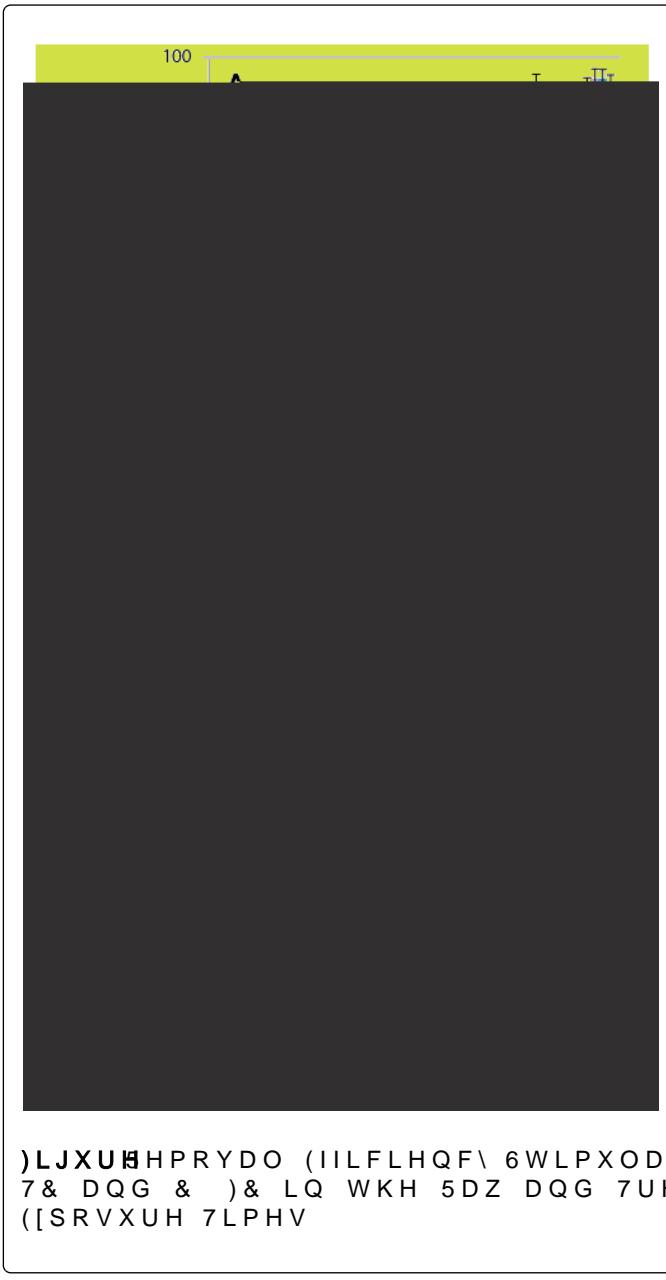
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7& DQG &)& LQ WKH 5DZ DQG 7UHDWHG :DVWHZDWHU DW 'LIIHUHQW
([SRVXUH 7LPHV

'LVFXVVLRQ

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5] DV ZHOO DV WZR H[RJHQRXV VWUDLQV 6 DQG 36 VKRZHG WKH DELOLW\ WR
FODULI\ GRPHVWLF ZDVWHZDWHU LQGLFDWLQJ WKDW WKH\ SRVVHVV WKH UHTXLU
GHJUDGLQJ HQ]\PHV 0ROHFXODU FKDUDFWHUL]DWLRQ RI WKH PRVW DFWLYH
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YHUPLF5RO%DFL0SXV6 3DHQGR PRVRQD\36 7KH
PL[HG FXOWXUH FRPELQDWLRQ ZLWK D IRXU VHOHFWHG FXOWXUHV SURYHG WR

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6   DIWHU   GD\ ZKLFK LV   IROG KLJKHU WKDQ LWV PD[LPXP

7LOOH\ ') $HURELF :DVWHZDWHU 7UHDWPHQW 3URFHVVHV +LVWRU\ DQG
'HYHORSPHQW ,:$ 3XEOLVKLQJ

+HQ]0H YDQ /RRVGUHFKW 0&0 (NDPD *$ %UGMDQRYLF ' HGV
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%HQLGŁFNVRQ7KH &XOWXUH RI)OXVKLQJ $ 6RFLDO DQG /HJDO +LVWRU\
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(O%HVWDZ\ ((O 0DVU\ 0+ (O $GO 1 7KH SRWHQWLDOLW\ RI IUHH
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(O%HVWDZ\ (+XVVHLQ + %DJKGDGL ++ (O 6DND 0) &RPSDULVRQ
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&OHVFUŁ*UHHQEHUJ &* (DWRQ $' 6WDQGDUG 0HWKRG IRU WKH
([DPLQDWLRQ RI :DWHU DQG :DVWHZDWHU WKGQ $PHULFDQ 3XEOLF
+HDOWK $VVRFLDWLRQ $3+$:DVKLQJWRQ

0D <- 'LVVHQ *$ 5DJH) 2MHGD 56 51DVH 3URWHFWLRQ $VVD\
0HWKRGV

$OWV6FKXⱢDVK : 0LOOHU : 0\HUV (: /LSPDQ '- %DVLF ORFDO
DOLJQPHQW VHDUFK WRRO - 0RO%LRO

+DOO %. +RPRORJ\ ,QWURGXFWLRQ 1RYDUWLV)XQG 6\PS

(O%HVWDZ\ (0DQV\ $+ 0DQVHH $+ (O .RZHLG\ $+