PRO45_CPs_002 Pool A

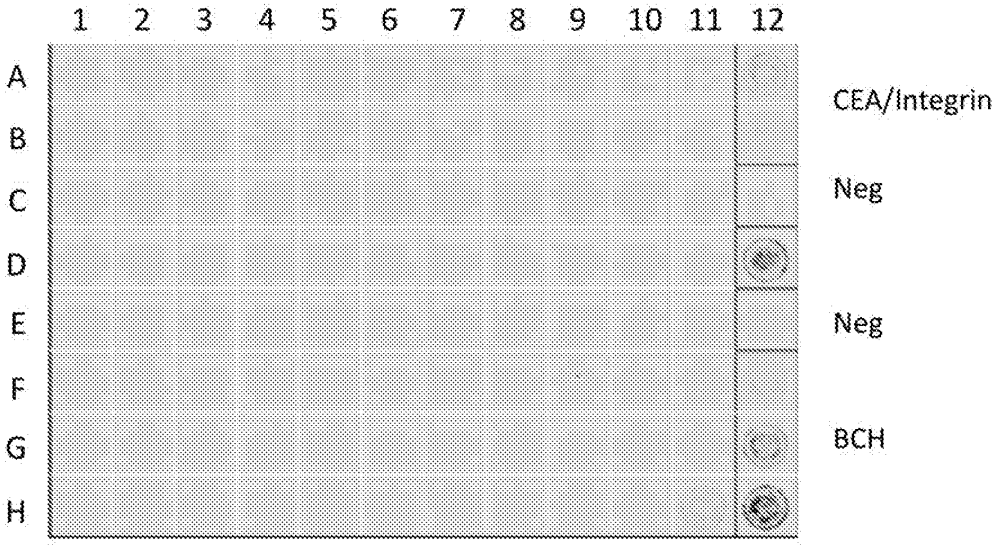


FIG. 1

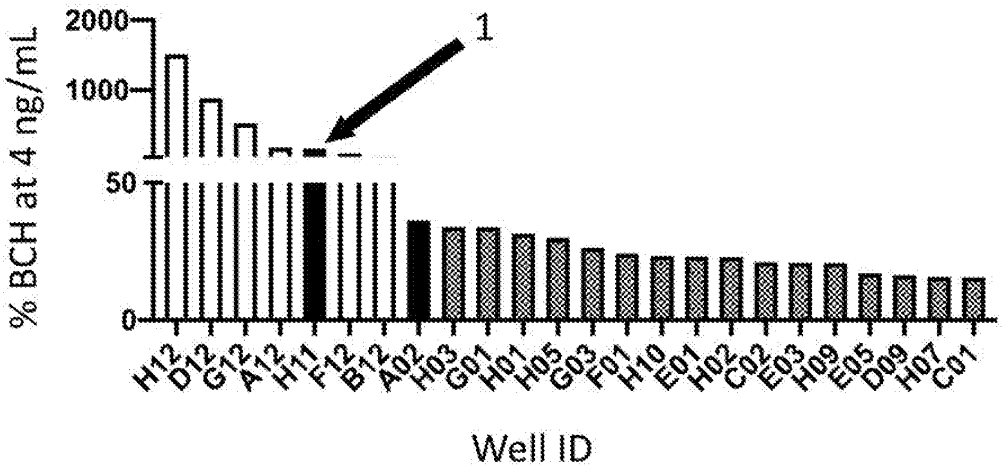

2000
1000
50
0
% BCH at 4 ng/mL
1
H12
D12
G12
A12
H11
F12
B12
A02
H03
G01
H01
H05
G03
F01
H10
E01
H02
C02
E03
H09
E05
D09
H07
C01
Well ID

FIG. 2

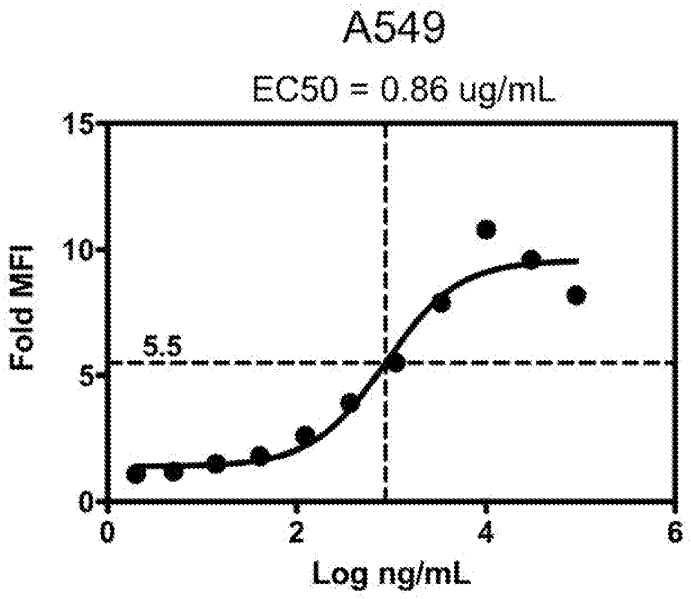

A549
EC50 = 0.86 ug/mL
Fold MFI
15
10
5
0
5.5
0
2
4
6
Log ng/mL

FIG. 3

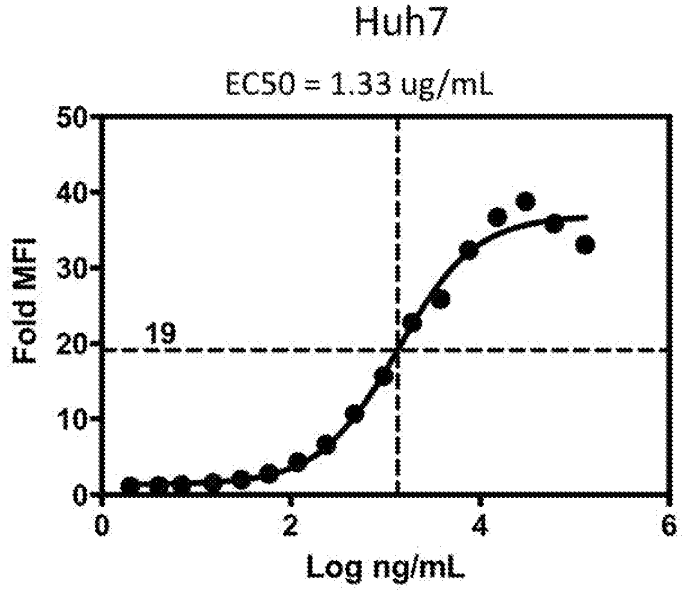

Huh7
EC50 = 1.33 ug/mL
Fold MFI
50
40
30
20
10
0
19
0
2
4
6
Log ng/mL

FIG. 4

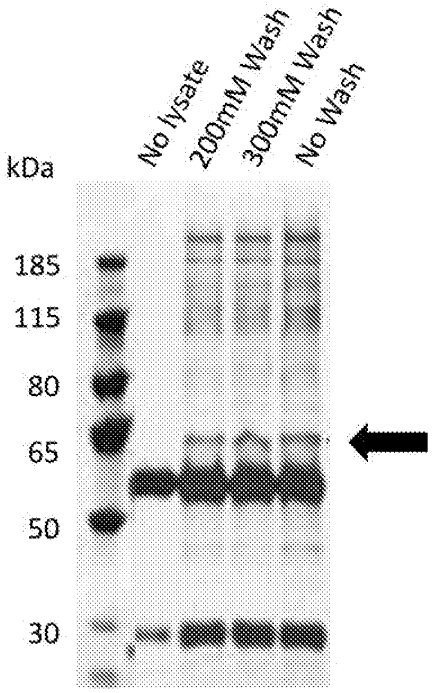


FIG. 5

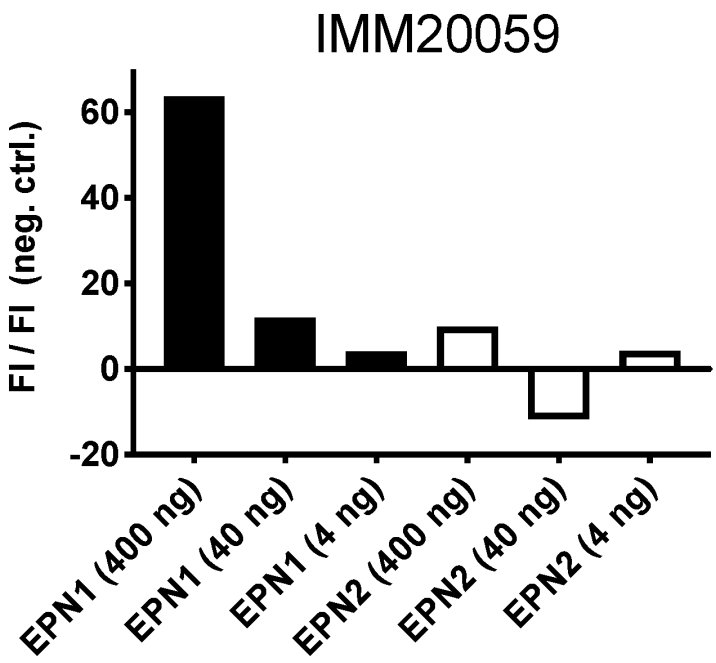

IMM20059
Fl / Fl (neg. ctrl.)
60
40
20
0
-20
EPN1 (400 ng)
EPN1 (40 ng)
EPN1 (4 ng)
EPN2 (400 ng)
EPN2 (40 ng)
EPN2 (4 ng)
Recombinant Protein

FIG. 6

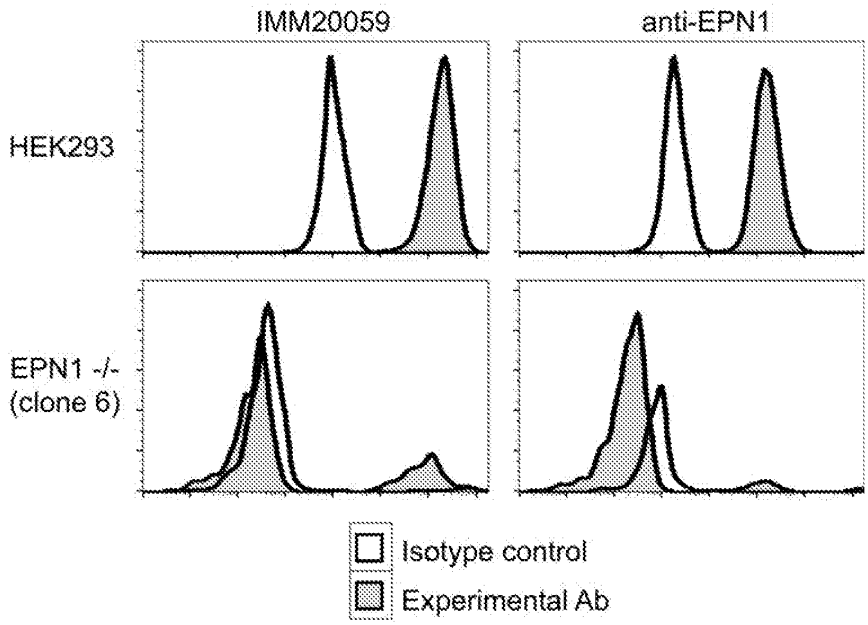
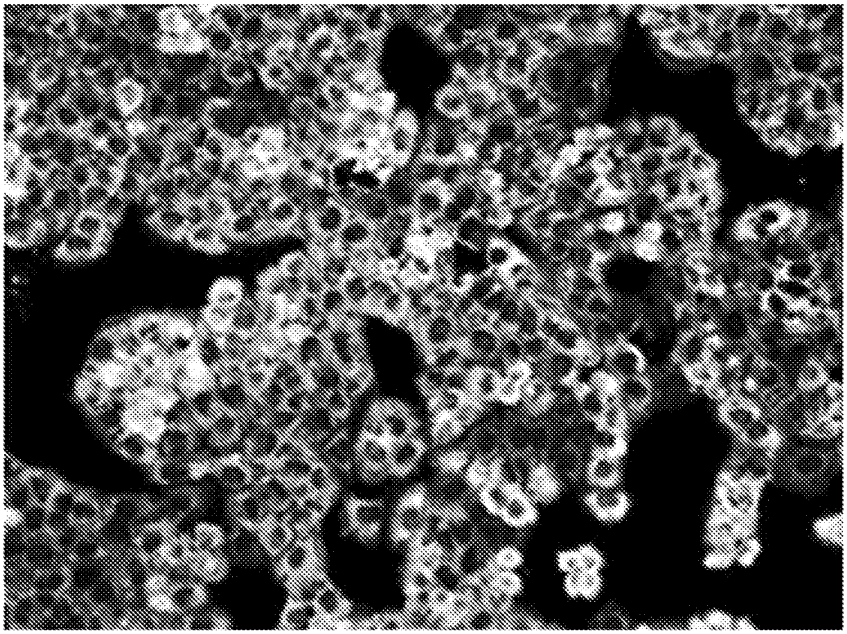
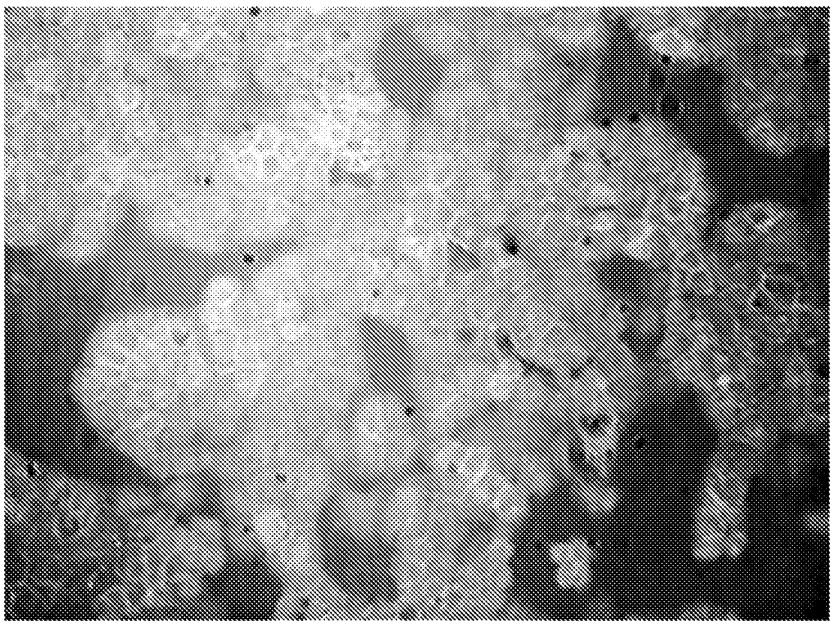

IMM20059
anti-EPN1
HEK293
EPN1 -/-
(clone 6)
Isotype control
Experimental Ab

FIG. 7



IMM20059 bound to H460 cells by IF

FIG. 8



Anti-EPN1 bound to H460 cells

FIG. 9

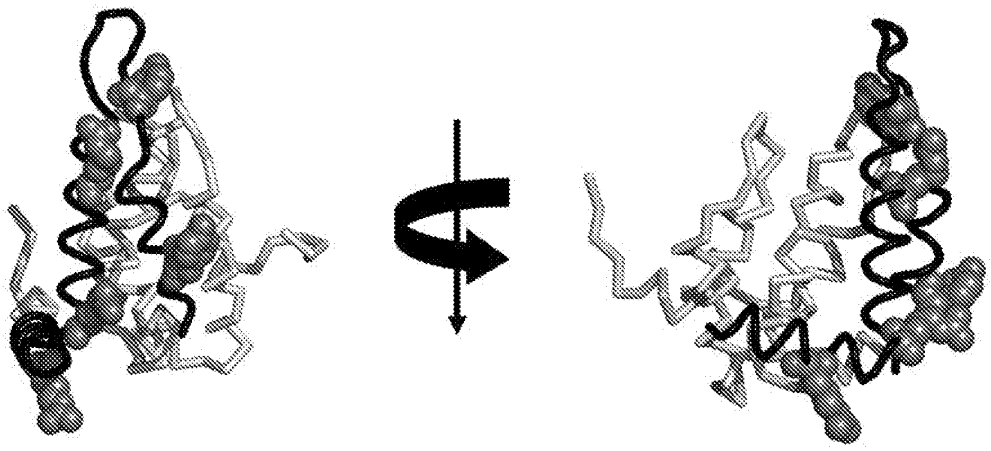


FIG. 10

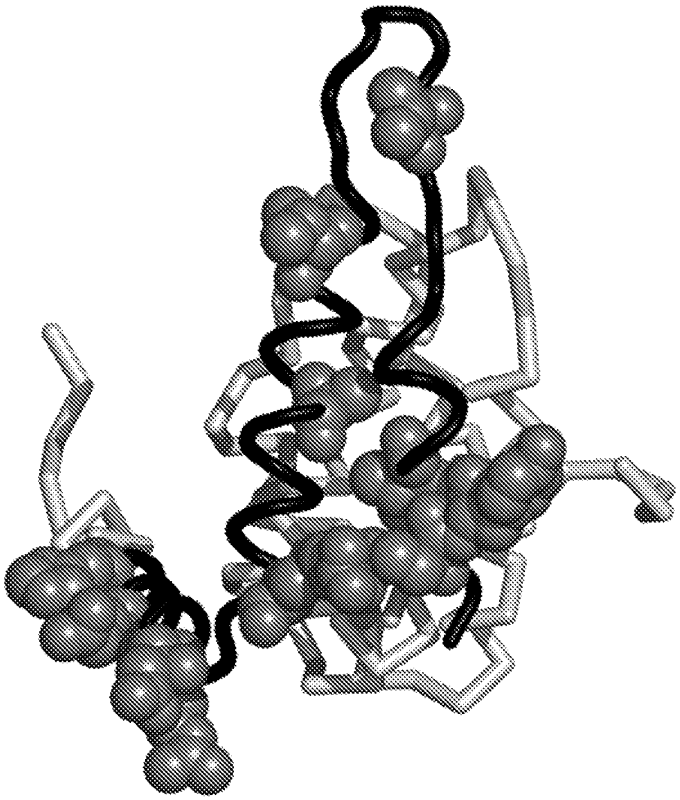


FIG. 11

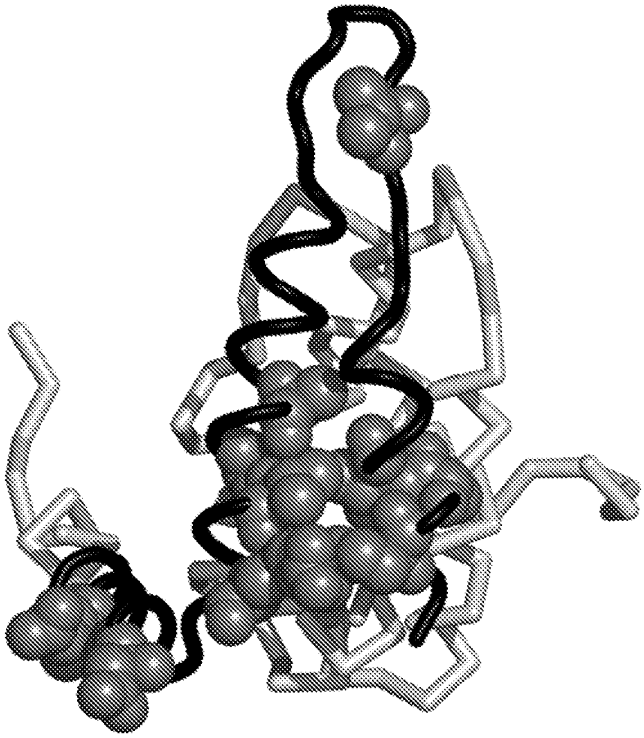


FIG. 12

```
CLUSTAL O(1.2.4) multiple sequence alignment

EPN1_HUMAN      MSTSSLRRQMKNIVHNYSEAEIKVREATSNDPWGPSSSLMSEIADLTYNVVAFSEIMSMI 60
EPN1_MOUSE      MSTSSLRRQMKNIVHNYSEAEIKVREATSNDPWGPSSSLMSEIADLTYNVVAFSEIMSMI 60
EPN1_RAT        MSTSSLRRQMKNIVHNYSEAEIKVREATSNDPWGPSSSLMSEIADLTYNVVAFSEIMSMI 60
                ************************************************************

EPN1_HUMAN      WKRLNDHGKNWRHVYKAMTLMEYLIKTGSERVSQQCKENMYAVQTLKDFQYVDRDGKDQG 120
EPN1_MOUSE      WKRLNDHGKNWRHVYKAMTLMEYLIKTGSERVSQQCKENMYAVQTLKDFQYVDRDGKDQG 120
EPN1_RAT        WKRLNDHGKNWRHVYKAMTLMEYLIKTGSERVSQQCKENMYAVQTLKDFQYVDRDGKDQG 120
                ************************************************************

EPN1_HUMAN      VNVREKAKQLVALLRDEDRLREERAHALKTKEKLAQTATASSAAVGSGPPPEAEQAWPQS 180
EPN1_MOUSE      VNVREKAKQLVALLRDEDRLREERAHALKTKEKLAQTATASSAAVGSGPPPEAEQAWPQS 180
EPN1_RAT        VNVREKAKQLVALLRDEDRLREERAHALKTKEKLAQTATASSAAVGSGPPPEAEQAWPQS 180
                ************************************************************

EPN1_HUMAN      SGEEELQLQLALAMSKEEADQPPSCGPEDDAQLQLALSLSREEHDKEERIRRGDDLRLQM 240
EPN1_MOUSE      SGEEELQLQLALAMSKEEADQPPSCGPEDDVQLQLALSLSREEHDKEERIRRGDDLRLQM 240
EPN1_RAT        SGEEELQLQLALAMSKEEADQPPSCGPEDDVQLQLALSLSREEHDKEERIRRGDDLRLQM 240
                ******************************.*****************************

EPN1_HUMAN      AIEESKRETGGKEESSLMDLADVFTAPAPAPTTDPWGGPAPMAAAVPTAAPTSDPWGGPP 300
EPN1_MOUSE      AIEESKRETGGKEESSLMDLADVFTTPAPPQASDPWGGPASVPTAVPVAAAASDPWGGPA 300
EPN1_RAT        AIEESKRETGGKEESSLMDLADVFTTPAPPQASDPWGGPASVPTAVPVAAAASDPWGAPA 300
                *************************:***  ::******* : :***.** :*****.*

EPN1_HUMAN      VPPAADPWGGPAPTPASGDPWRPAAPAGPSVDPWGGTPAPAAGEGPTPDPWGSSDGGVPV 360
EPN1_MOUSE      VPPAADPWGGAAPTPASGDPWRPAAPTGPSVDPWGGTPAPAAGEGPTPDPWGSSDGGAPV 360
EPN1_RAT        VPPAADPWGGAAPTPASGDPWRPAAPTGPSVDPWGGTPAPAAGEGPTSDPWGSADGGAPV 360
                ********** ***************:****************** *****:***.**

EPN1_HUMAN      SGPSASDPWTPAPAFSDPWGGSPAKPSTNGTTAAGGFDTEPDEFSDFDRLRTALPTSGSS 420
EPN1_MOUSE      SGPPSSDPWAPAPAFSDPWGGSPAKPSSNGT-AVGGFDTEPDEFSDFDRLRTALPTSGSS 419
EPN1_RAT        SGPPSSDPWAPAPAFSDPWGGSPAKPSSNGT-AVGGFDTEPDEFSDFDRLRTALPTSGSS 419
                *** :****:*****************:*** *.*************************

EPN1_HUMAN      AGELELLAGEVPARSPGAFDMSGVRGSLAEAVGSPPPAATPTPTPPTRKTPESFLGPNAA 480
EPN1_MOUSE      TGELELLAGEVPARSPGAFDMSGVGGSLAESVGSPPPAATPTPTPPTRKTPESFLGPNAA 479
EPN1_RAT        TGELELLAGEVPARSPGAFDMSGVGGSLAESVGSPPPAATPTPTPPTRKTPESFLGPNAA 479
                :********************** *****:****************************

EPN1_HUMAN      LVDLDSLVSRPGPTPPGAKASNPFLPGGGPATGPSVTNPFQPAPPATLTLNQLRLSPVPP 540
EPN1_MOUSE      LVDLDSLVSRPGPTPPGSKASNPFLPSGAPPTGPSVTNPFQPAPPATLTLNQLRLSPVPP 539
EPN1_RAT        LVDLDSLVSRPGPTPPGAKASNPFLPSGAPATGPSVTNPFQPAPPATLTLNQLRLSPVPP 539
                *****************:********.*.* ****************************

EPN1_HUMAN      VPGAPPTYISPLGGGPGLPPMMPPGPPAPNTNPFLL  576
EPN1_MOUSE      VPGAPPTYISPLGGGPGLPPMMPPGPPAPNTNPFLL  575
EPN1_RAT        VPGAPPTYISPLGGGPGLPPMMPPGPPAPNTNPFLL  575
                ************************************
```

FIG. 13

```
CLUSTAL O(1.2.4) multiple sequence alignment


EPN1_HUMAN      MSTSSLRRQMKNIVHNYSEAEIKVREATSNDPWGPSSSLMSEIADLTYNVVAFSEIMSMI 60
EPN2_HUMAN      MTTSSIRRQMKNIVNNYSEAEIKVREATSNDPWGPSSSLMTEIADLTYNVVAFSEIMSMV 60
EPN3_HUMAN      MTTSALRRQVKNIVHNYSEAEIKVREATSNDPWGPPSSLMSEIADLTFNTVAFTEVMGML 60
                *:**::***:****:******************** ****:******:*.***:*:*.*:

EPN1_HUMAN      WKRLNDHGKNWRHVYKAMTLMEYLIKTGSERVSQQCKENMYAVQTLKDFQYVDRDGKDQG 120
EPN2_HUMAN      WKRLNDHGKNWRHVYKALTLLDYLIKTGSERVAQQCRENIFAIQTLKDFQYIDRDGKDQG 120
EPN3_HUMAN      WRRLNDSGKNWRHVYKALTLLDYLLKTGSERVAHQCRENLYTIQTLKDFQYIDRDGKDQG 120
                *:**** **********:**::**:*******::**:**::::********:********

EPN1_HUMAN      VNVREKAKQLVALLRDEDRLREERAHALKTKEKLAQTATASSAA---VGSGP--PP----- 171
EPN2_HUMAN      INVREKSKQLVALLKDEERLKAERAQALKTKERMAQVATGMGSNQITFGRGSSQPNLSTS 180
EPN3_HUMAN      VNVREKVKQVMALLKDEERLRQERTHALKTKERMALEGIGIGSGQLGFSRRY-------- 172
                :***** **::***:**:**: **::******::*  . . .:    ..

EPN1_HUMAN      EAEQAWPQSSG-------------------------EEELQ---------LQLAL----- 192
EPN2_HUMAN      HSEQEYGKAGGSPASYHGSPEASLCPQHRTGAPLGQSEELQPLSQRHPFLPHLGLASRPN 240
EPN3_HUMAN      --GEDYSRSRGSPSSYNSSS---------------------------------------- 190
                   : : :: *

EPN1_HUMAN      -------------------AMSKEEADQPPSCGPEDDAQLQLALSLSREEHDKEER--IR 231
EPN2_HUMAN      GDWSQPCLTCDRAARATSPRVSSELEQARPQTSGEEELQLQLALAMSREVAEQEER--LR 298
EPN3_HUMAN      ----------------SSPRYTSDLEQARPQTSGEEELQLQLALAMSREEAEKPVPPASH 234
                                  :.:  :  *. . *:: ******::***  ::      :

EPN1_HUMAN      RGDDLRLQMAIEESKRET-----------------------------GGKE--------- 253
EPN2_HUMAN      RGDDLRLQMALEESRRDT-----------------------------VKIPKKKEHGSL 328
EPN3_HUMAN      RDEDLQLQLALRLSRQEHEKEVRSWQGDGSPMANGAGAVVHHQRDREPEREERKEEEKLK 294
                *.:**:**:*:. *:::

EPN1_HUMAN      --ESSLMDLADVFTAPAPAP----TTDPWGGPAPMAAAVPTAAPTSDPWGGPPVPPAADP 307
EPN2_HUMAN      PQQTTLLDLMDALPSSG-----------------------PAAQKAEPWGPSASTNQTNP 365
EPN3_HUMAN      TSQSSILDLADIFVPALAPPSTHCSADPWDIPGF----RPNTEASGSSWGPSA-----DP 345
                  ::::::** * :                          :  ... **        :*

EPN1_HUMAN      WGGPA--PTPASGDPWRPAAP-AGPSVDPWGGTPAPAAGEGPTPDPWGSSDGGVPVSGPS 364
EPN2_HUMAN      WGGPA--APASTSDPWPSFGTKPAASIDP-----------------WGVPTGATVQSVPK 406
EPN3_HUMAN      WSPIPSGTVLSRSQPWDLT--PMLSSSEPWGRTPVLP--------------------AGPP 384
                *.        : .:**         * :*                        : *

EPN1_HUMAN      ASDPWTPAP---------AFSDPWGGSPAKPSTNGTTAAGGF-------DTEPDEFSDFDR 409
EPN2_HUMAN      NSDPWAASQQPASSAGKRASDAWGAVSTTKP---VSVSGSFELFSNLNGTIKDDFSEFDN 463
EPN3_HUMAN      TTDPWALNS-PHHKLPSTGADPWGASLETSDTPGG--ASTFDPFAKPPEST----ETKEG 437
                 :***:             :* **.   .        :. *        :     .  :

EPN1_HUMAN      LRTALPT-------SGSSAGELELLAGEVPARSPGAFDMSGVRGSLAEAVGSPPPAATPT 462
EPN2_HUMAN      LRTSKKT-------AESVTSLP---SQNNGTTSPDPFE-------------SQPLTVASS 500
EPN3_HUMAN      LEQALPSGKPSSPVELDLFGDPSPSSKQNGTKEPDALDLGILGEAL----------TQPS 487
                *. :  :         .  .     : :  : .*. ::                 .  :

EPN1_HUMAN      PTPPTRKTPESFLGPNA-ALVDLDSLVSRPGPTPPGAKASNPFLPGGGPATGPSVTNPFQ 521
EPN2_HUMAN      KPSSARKTPESFLGPNA-ALVNLDSLVTRPAPP---AQSLNPFLAPGAPATSA-PVNPFQ 555
EPN3_HUMAN      KEARACRTPESFLGPSASSLVNLDSLVKAPQV----AKTRNPFLTGL---SAPSPTNPFG 540
                    : :********.* :**:*****. *      *:: ****      :.   .***

EPN1_HUMAN      PAPPATLTLNQLRL-SPVPPVPGAPPTYISPLGGGP-----GLP-PMMPPG--------- 565
EPN2_HUMAN      VNQPQPLTLNQLRG-SPVLGTS-------TSFGPGP-----GVE-SMAVASMTSAAPQPA 601
EPN3_HUMAN      AGEPGRPTLNQMRTGSPALGLAGGPVGA--PLGSMTYSASLPLPLSSVPAGLTLPASVSV 598
                   *   ****:*  **.            :*         :       .

EPN1_HUMAN      ------------------------------PPAPNTNPFLL    576
EPN2_HUMAN      LGATGSSLTPLGPA-MMNMVGSVGIPPSAAQATGTTNPFLL    641
EPN3_HUMAN      FPQAGA----FAPQPLLPT--PSSAGPRPPPPQTGTNPFL-    632
                                           *****
```

FIG. 14

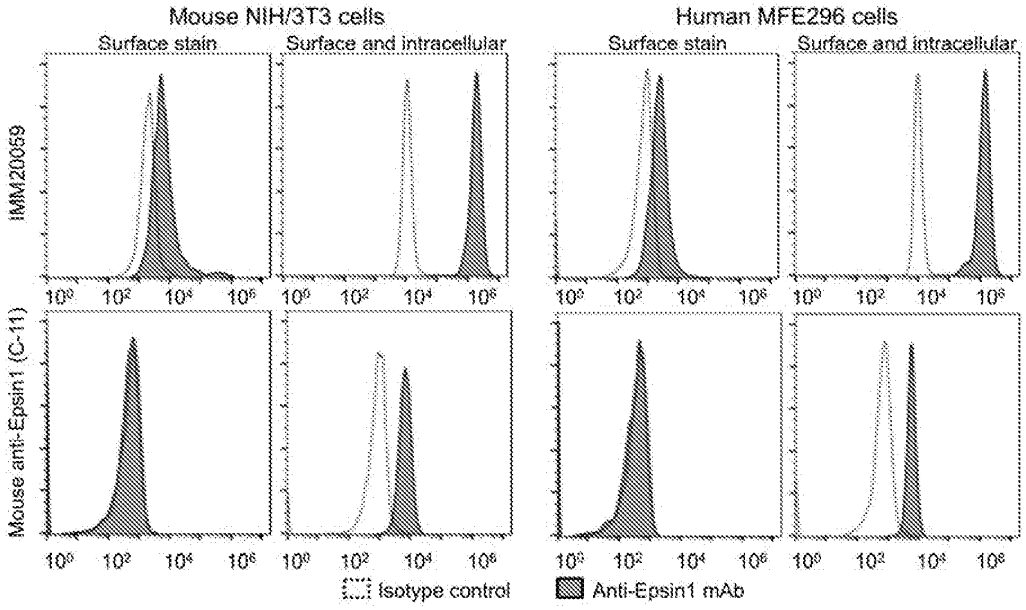

Mouse NIH/3T3 cells
Human MFE296 cells
Surface stain
Surface and intracellular
IMM20059
Mouse anti-Epsin1 (C-11)
Isotype control
Anti-Epsin1 mAb

FIG. 15

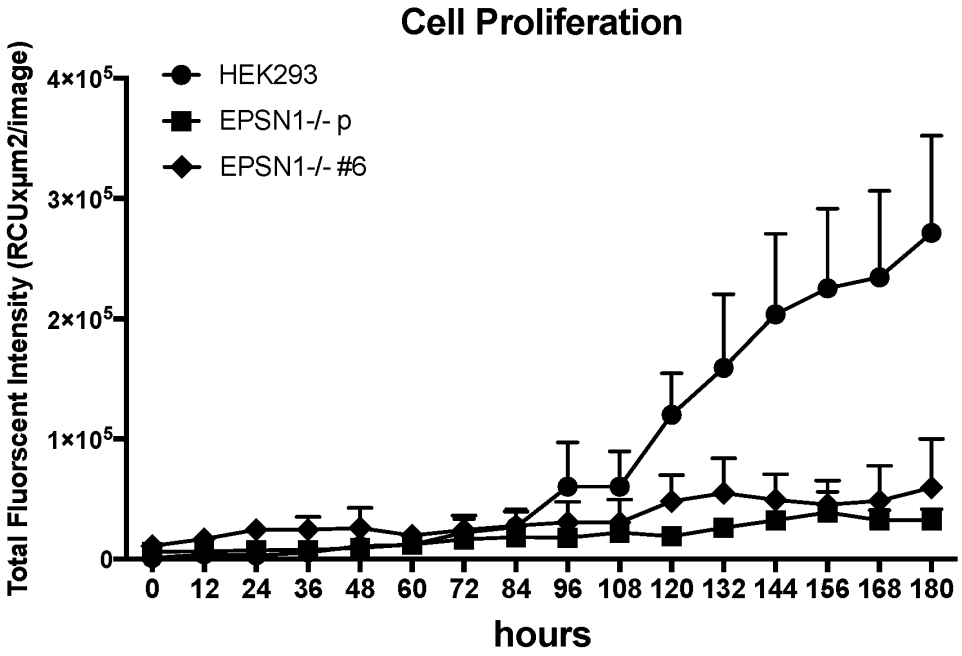

Cell Proliferation
Total Fluorscent Intensity (RCUxµm2/image)
HEK293
EPSN1-/- p
EPSN1-/- #6
hours

FIG. 16

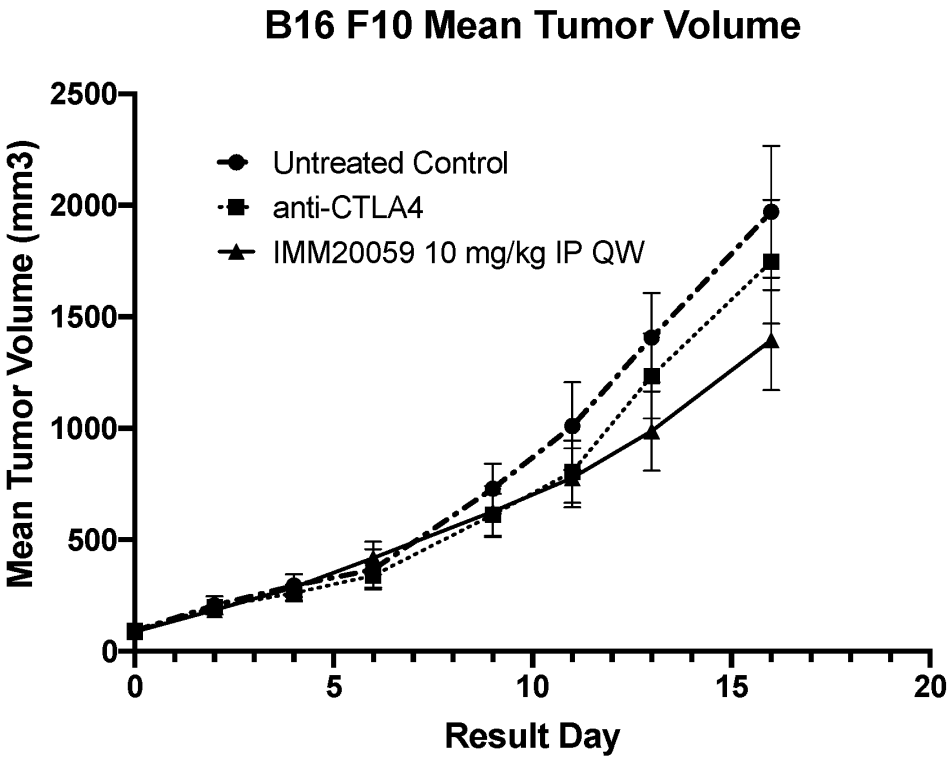

B16 F10 Mean Tumor Volume
Mean Tumor Volume (mm3)
2500
2000
1500
1000
500
0
Untreated Control
anti-CTLA4
IMM20059 10 mg/kg IP QW
0
5
10
15
20
Result Day

FIG. 17