A. Cetuximab Heavy Chain (SEQ ID NO:1)

```
        10         20         30         40         50         60
QVQLKQSGPG LVQPSQSLSI TCTVSGFSLT NYGVHWVRQS PGKGLEWLGV IWSGGNTDYN
        70         80         90        100        110        120
TPFTSRLSIN KDNSKSQVFF KMNSLQSNDT AIYYCARALT YYDYEFAYWG QGTLVTVSAA
       130        140        150        160        170        180
STKGPSVFPL APSSKSTSGG TAALGCLVKD YFPEPVTVSW NSGALTSGVH TFPAVLQSSG
       190        200        210        220        230        240
LYSLSSVVTV PSSSLGTQTY ICNVNHKPSN TKVDKRVEPK SPKSCDKTHT CPPCPAPELL
       250        260        270        280        290        300
GGPSVFLFPP KPKDTLMISR TPEVTCVVVD VSHEDPEVKF NWYVDGVEVH NAKTKPREEQ
       310        320        330        340        350        360
YNSTYRVVSV LTVLHQDWLN GKEYKCKVSN KALPAPIEKT ISKAKGQPRE PQVYTLPPSR
       370        380        390        400        410        420
DELTKNQVSL TCLVKGFYPS DIAVEWESNG QPENNYKTTP PVLDSDGSFF LYSKLTVDKS
       430        440        450
RWQQGNVFSC SVMHEALHNH YTQKSLSLSP GK
```

B. Cetuximab Light Chain (SEQ ID NO:2)

```
        10         20         30         40         50         60
DILLTQSPVI LSVSPGERVS FSCRASQSIG TNIHWYQQRT NGSPRLLIKY ASESISGIPS
        70         80         90        100        110        120
RFSGSGSGTD FTLSINSVES EDIADYYCQQ NNNWPTTFGA GTKLELKRTV AAPSVFIFPP
       130        140        150        160        170        180
SDEQLKSGTA SVVCLLNNFY PREAKVQWKV DNALQSGNSQ ESVTEQDSKD STYSLSSTLT
       190        200        210
LSKADYEKHK VYACEVTHQG LSSPVTKSFN RGA
```

FIGURE 1

Heavy Chain

```
SEQIDNO:3       QVQLKQSGPGLVQPSQSLSITCTVSGFSLTNYGVHWVRQSPGKGLEWLGVIWSGGNTDYN 60
SEQIDNO:28      EVQLVESGGGLVQPGGSLRLSCAASGFSLTNYGVHWVRQAPGKGLEWLGVIWSGGNTDYN 60
                :*** :** *****. ** ::*:.***************:********************

SEQIDNO:3       TPFTSRLSINKDNSKSQVFFKMNSLQSNDTAIYYCARALTYYDYEFAYWGQGTLVTVSA 119
SEQIDNO:28      TPFTSRLTINKDNSKNTVYLQMNSLRAEDTAVYYCARALTYYDYEFAYWGQGTLVTVSS 119
                *******:*******. *:::****:::***:*************************:
```

Light Chain

```
SEQIDNO:4       DILLTQSPVILSVSPGERVSFSCRASQSIGTNIHWYQQRTNGSPRLLIKYASESISGIPS 60
SEQIDNO:29      DILLTQSPGTLSLSPGERATLSCRASQSIGTNIHWYQQKPGQAPRLLIKYASESISGIPD 60
                ********  **:*****.::******************:.. :****************.

SEQIDNO:4       RFSGSGSGTDFTLSINSVESEDIADYYCQQNNNWPTTFGAGTKLELK 107
SEQIDNO:29      RFSGSGSGTDFTLTISRLEPEDFAVYYCQQNNNWPTTFGQGTKLEIK 107
                *************:*. :*.**:* ************** *****:*
```

FIGURE 2A

Heavy Chain

```
SEQIDNO:3       QVQLKQSGPGLVQPSQSLSITCTVSGFSLTNYGVHWVRQSPGKGLEWLGVIWSGGNTDYN 60
SEQIDNO:3       QVQLKQSGPGLVQPSQSLSITCTVSGFSLTNYGVHWVRQSPGKGLEWLGVIWSGGNTDYN 60
                ************************************************************

SEQIDNO:3       TPFTSRLSINKDNSKSQVFFKMNSLQSNDTAIYYCARALTYYDYEFAYWGQGTLVTVSA 119
SEQIDNO:3       TPFTSRLSINKDNSKSQVFFKMNSLQSNDTAIYYCARALTYYDYEFAYWGQGTLVTVSA 119
                ************************************************************
```

Light Chain

```
SEQIDNO:4       DILLTQSPVILSVSPGERVSFSCRASQSIGTNIHWYQQRTNGSPRLLIKYASESISGIPS 60
SEQIDNO:10      DILLTQSPVILSVSPGERVSFSCRASQSIGTNIHWYQQRTNGSPRLLIKYASESISGIPS 60
                ************************************************************

SEQIDNO:4       RFSGSGSGTDFTLSINSVESEDIADYYCQQNNNWPTTFGAGTKLELK 107
SEQIDNO:10      RFSGSGSGTDFTLSINSVESEDIADYYCQQNNNWPTTFGQGTKLELK 107
                ***************************************  *******
```

FIGURE 2B

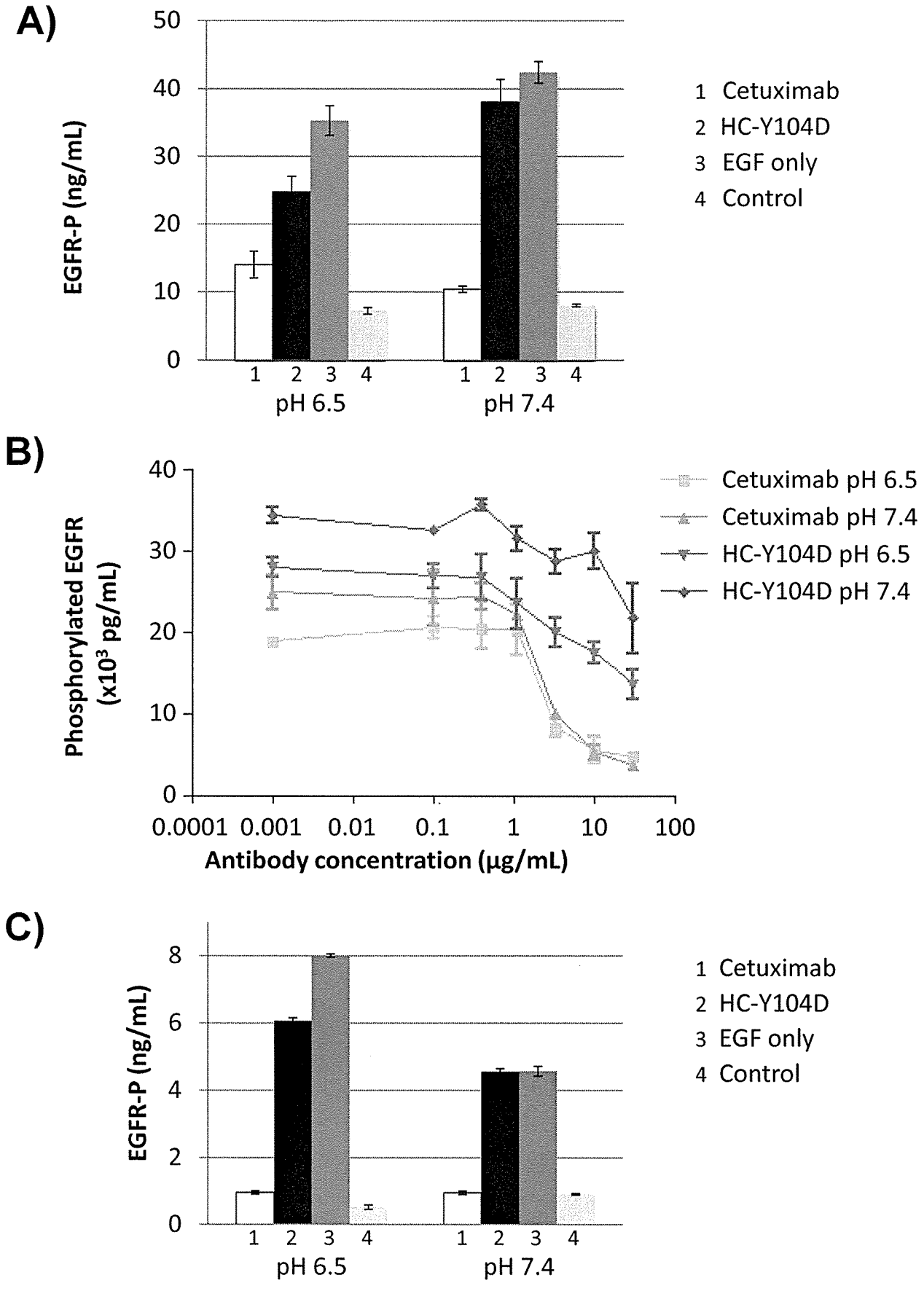
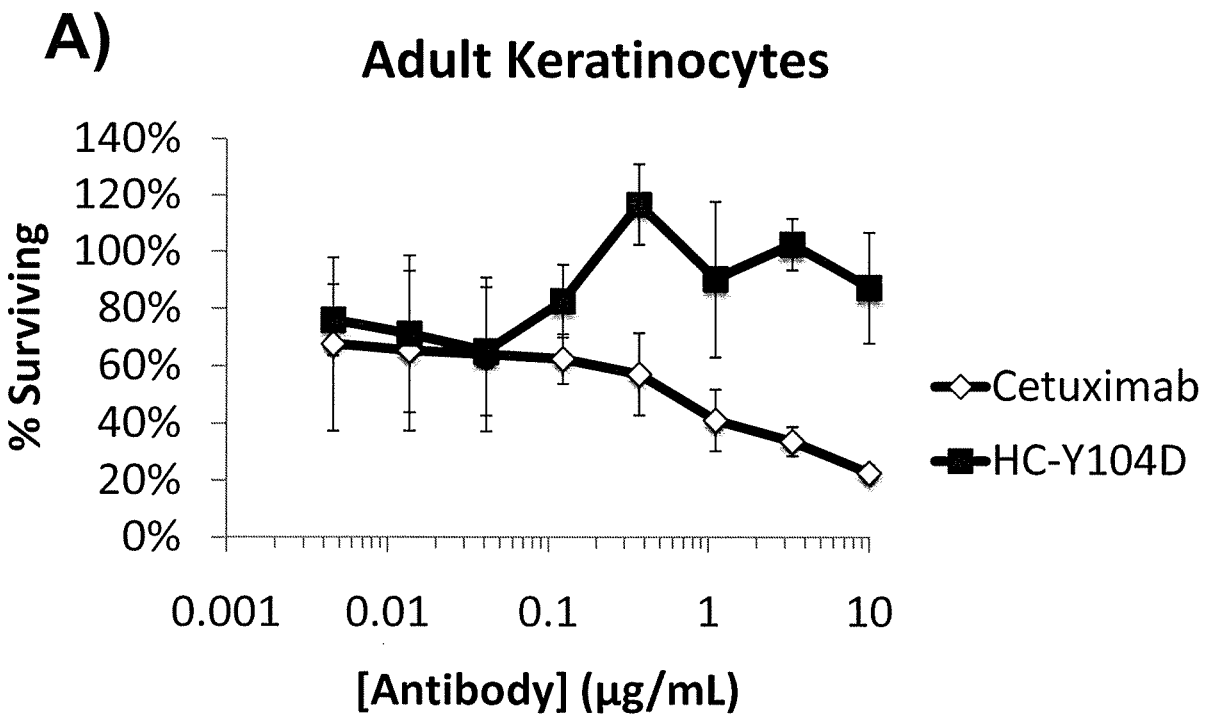

A)
EGFR-P (ng/mL)
50
40
30
20
10
0
1 2 3 4
pH 6.5
1 2 3 4
pH 7.4
1 Cetuximab
2 HC-Y104D
3 EGF only
4 Control
B)
Phosphorylated EGFR (x10³ pg/mL)
40
30
20
10
0
0.0001 0.001 0.01 0.1 1 10 100
Antibody concentration (µg/mL)
Cetuximab pH 6.5
Cetuximab pH 7.4
HC-Y104D pH 6.5
HC-Y104D pH 7.4
C)
EGFR-P (ng/mL)
8
6
4
2
0
1 2 3 4
pH 6.5
1 2 3 4
pH 7.4
1 Cetuximab
2 HC-Y104D
3 EGF only
4 Control

Figure 3


A)
Adult Keratinocytes
% Surviving
140%
120%
100%
80%
60%
40%
20%
0%
0.001
0.01
0.1
1
10
[Antibody] (µg/mL)
Cetuximab
HC-Y104D

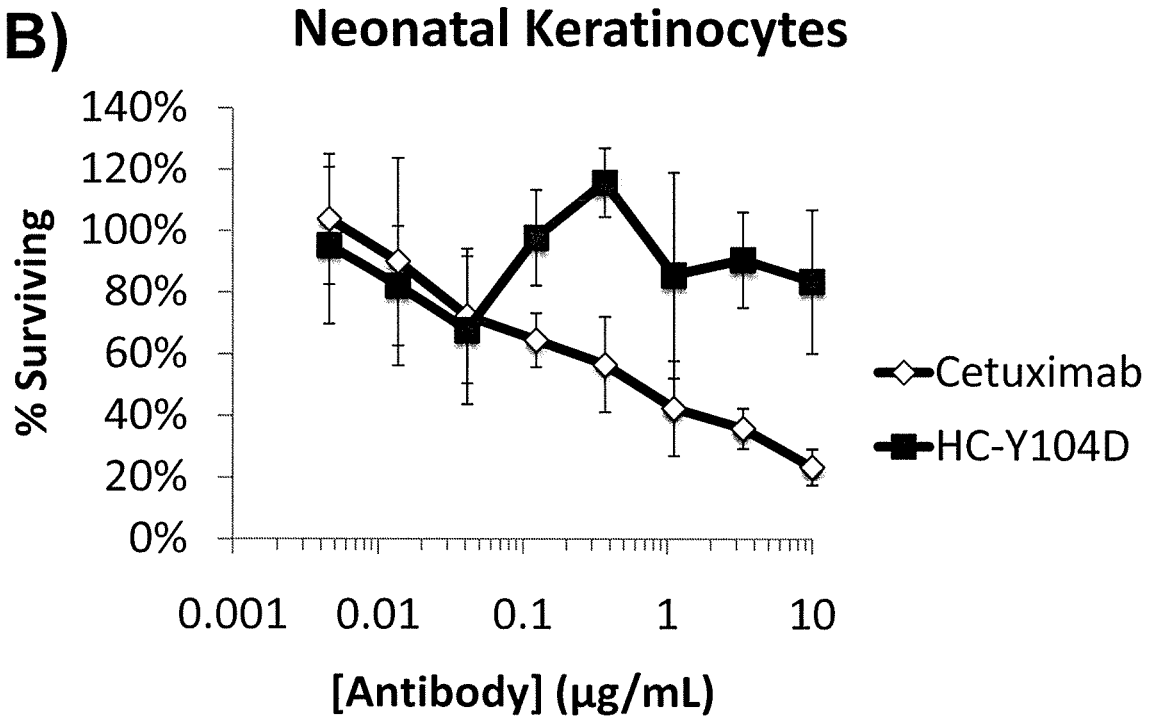

B)
Neonatal Keratinocytes
% Surviving
140%
120%
100%
80%
60%
40%
20%
0%
0.001
0.01
0.1
1
10
[Antibody] (µg/mL)
Cetuximab
HC-Y104D

Figure 4

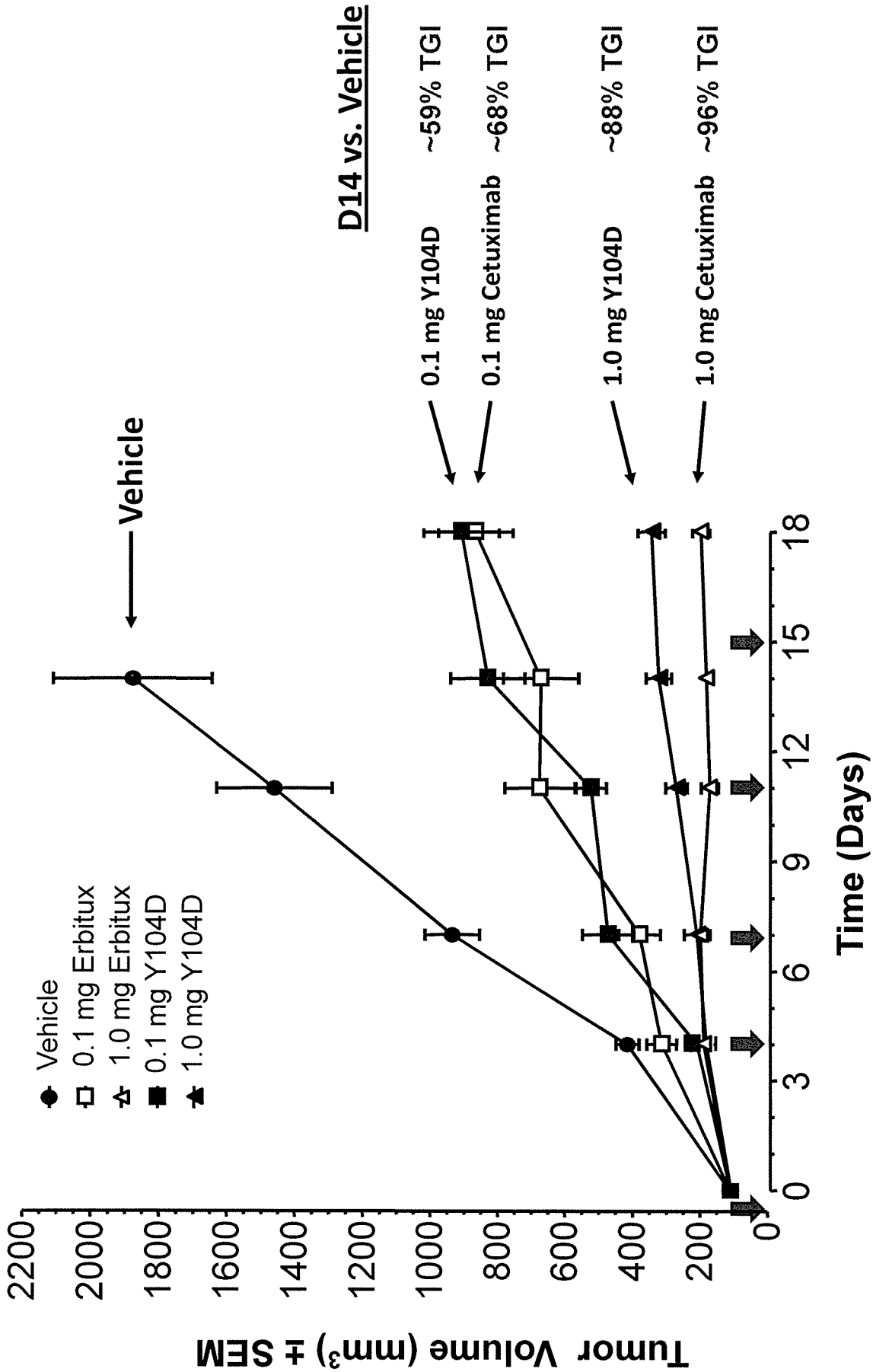

Tumor Volume (mm³) ± SEM
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0
3
6
9
12
15
18
Time (Days)
Vehicle
0.1 mg Erbitux
1.0 mg Erbitux
0.1 mg Y104D
1.0 mg Y104D
Vehicle
D14 vs. Vehicle
0.1 mg Y104D ~59% TGI
0.1 mg Cetuximab ~68% TGI
1.0 mg Y104D ~88% TGI
1.0 mg Cetuximab ~96% TGI

Figure 5

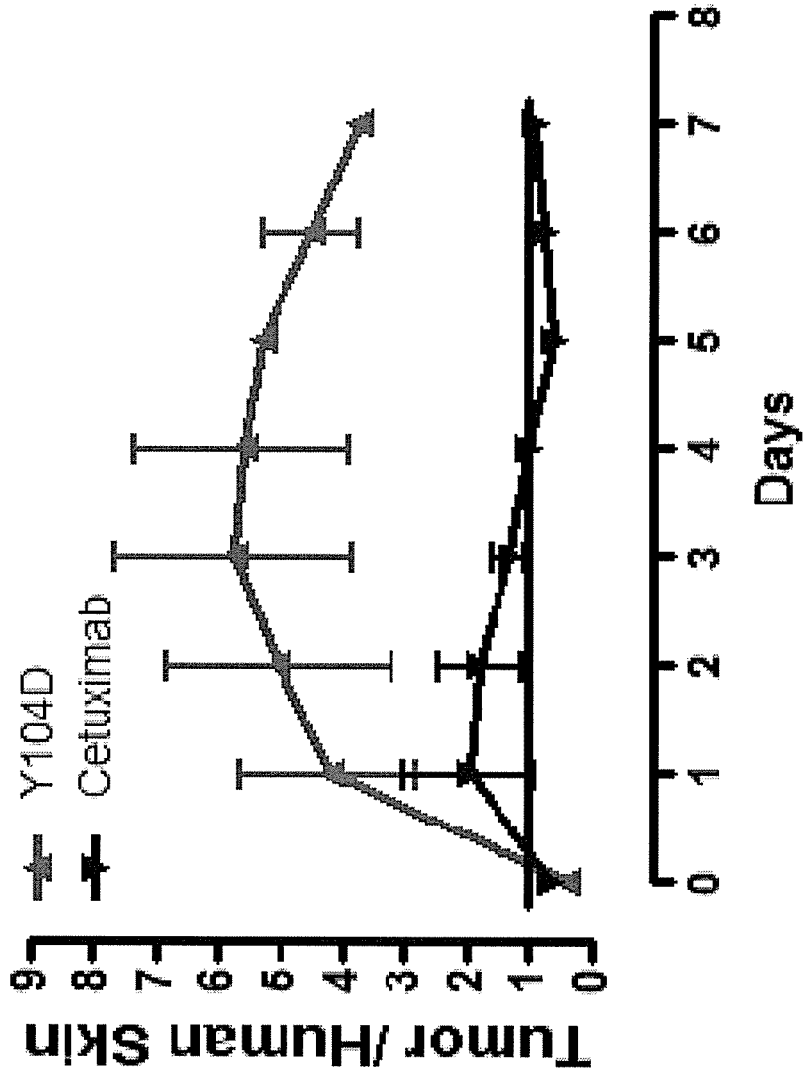

Tumor /Human Skin
0
1
2
3
4
5
6
7
8
9
Y104D
Cetuximab
0
1
2
3
4
5
6
7
8
Days

Figure 6