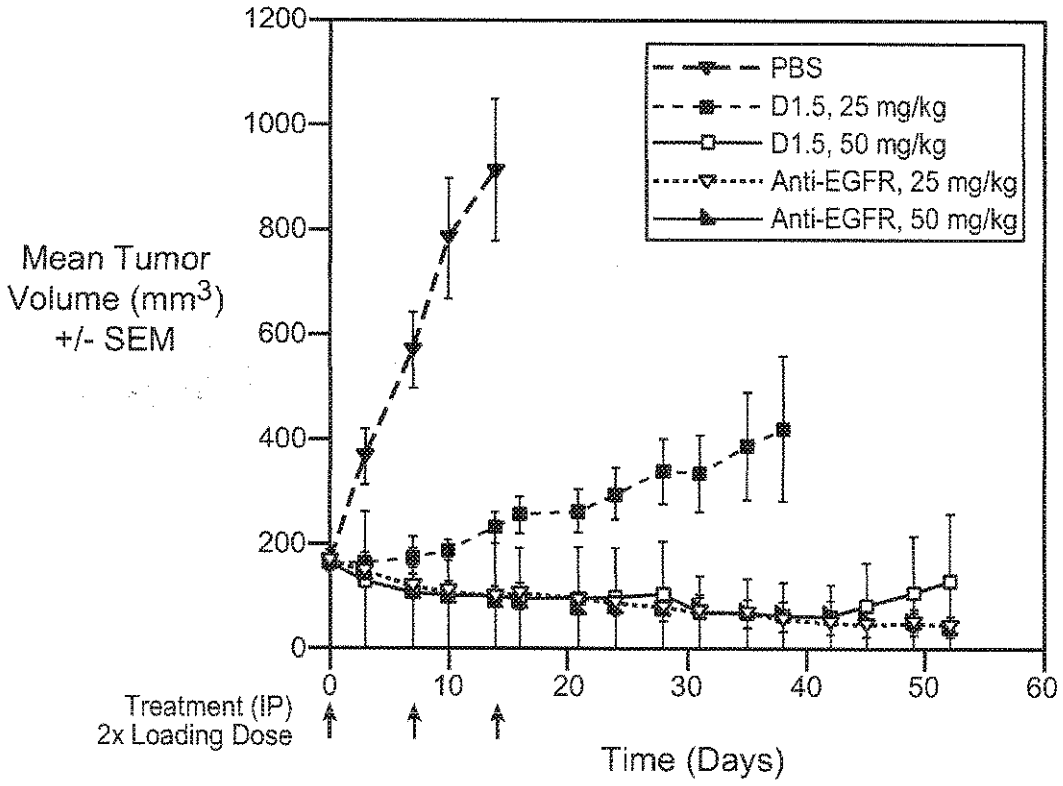

1200
1000
800
600
400
200
0
Mean Tumor Volume (mm^3) +/- SEM
PBS
D1.5, 25 mg/kg
D1.5, 50 mg/kg
Anti-EGFR, 25 mg/kg
Anti-EGFR, 50 mg/kg
0
10
20
30
40
50
60
Treatment (IP)
2x Loading Dose
Time (Days)

FIG. 1

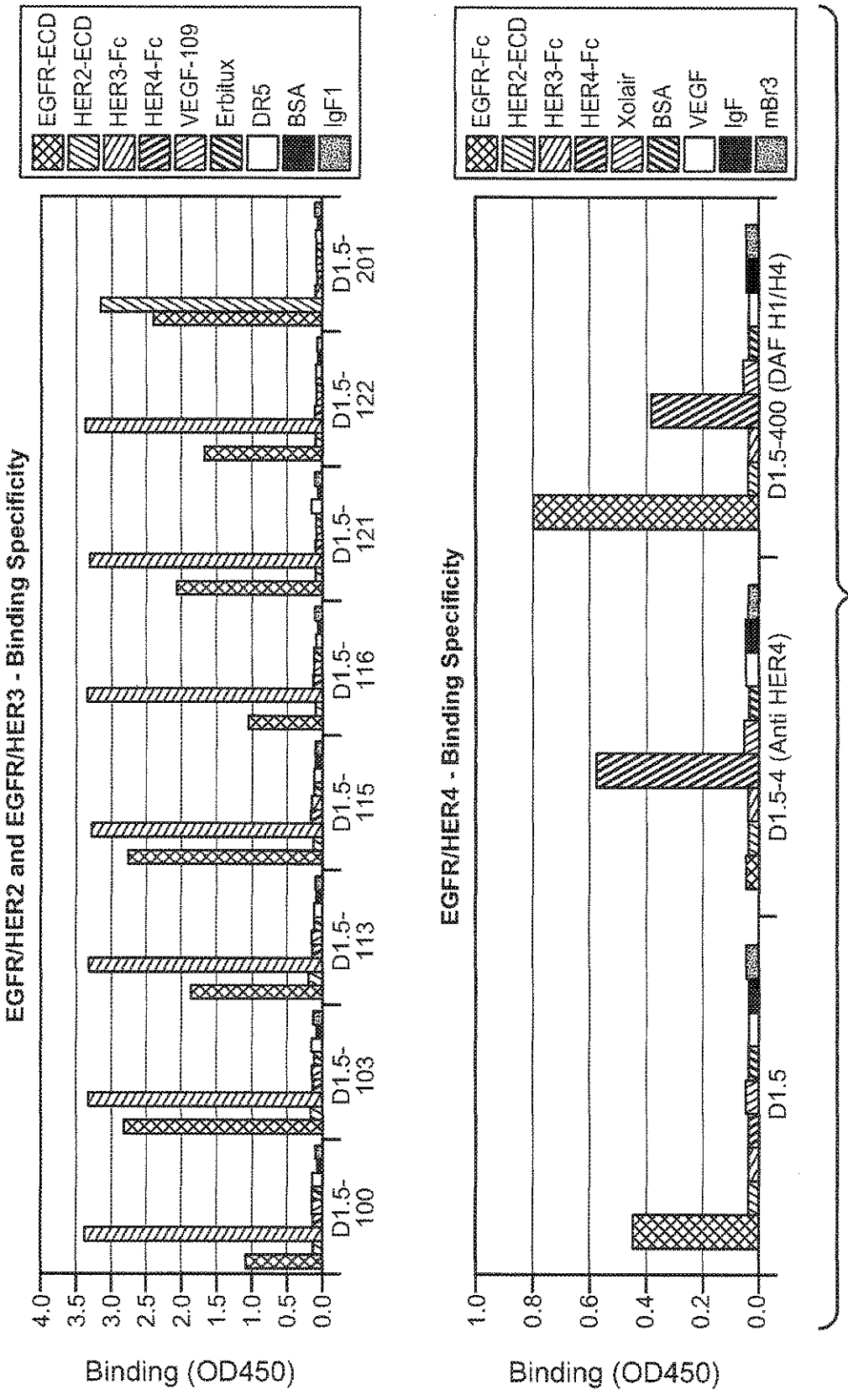

EGFR-ECD
HER2-ECD
HER3-Fc
HER4-Fc
VEGF-109
Erbitux
DR5
BSA
IgF1
EGFR/HER2 and EGFR/HER3 - Binding Specificity
Binding (OD450)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
D1.5-100
D1.5-103
D1.5-113
D1.5-115
D1.5-116
D1.5-121
D1.5-122
D1.5-201
EGFR-Fc
HER2-ECD
HER3-Fc
HER4-Fc
Xolair
BSA
VEGF
IgF
mBr3
EGFR/HER4 - Binding Specificity
Binding (OD450)
1.0
0.8
0.6
0.4
0.2
0.0
D1.5
D1.5-4 (Anti HER4)
D1.5-400 (DAF H1/H4)

FIG. 2

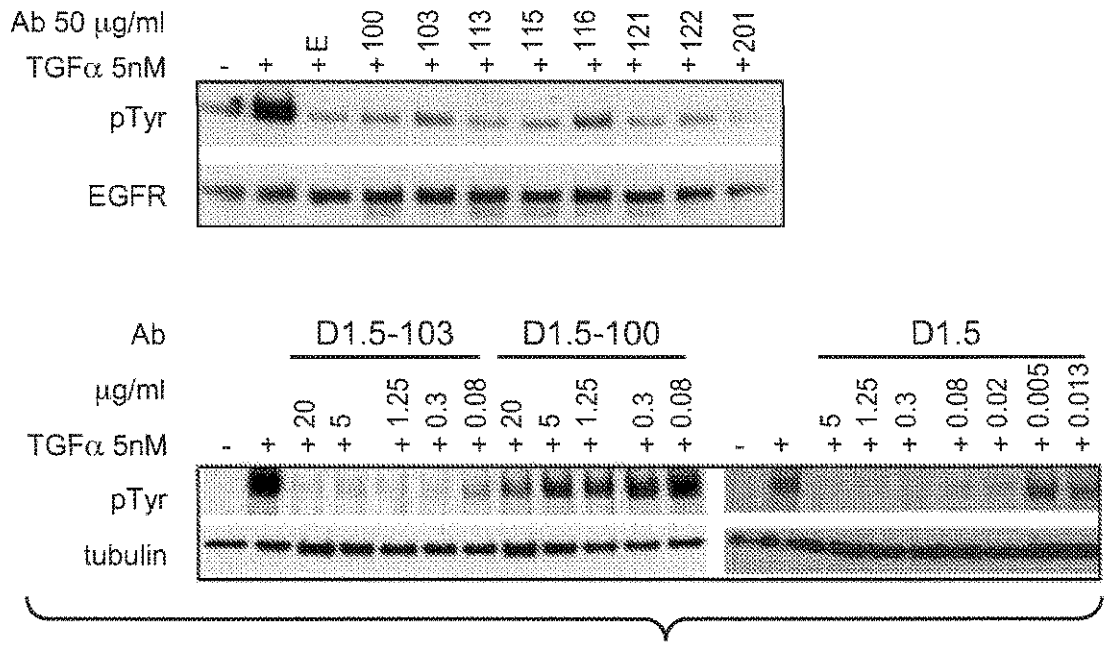

Ab 50 µg/ml
TGFα 5nM
- + +E +100 +103 +113 +115 +116 +121 +122 +201
pTyr
EGFR
Ab
D1.5-103
D1.5-100
D1.5
µg/ml
- + 20 5 1.25 0.3 0.08 20 5 1.25 0.3 0.08 - + 5 1.25 0.3 0.08 0.02 0.005 0.013
TGFα 5nM
pTyr
tubulin

FIG. 3

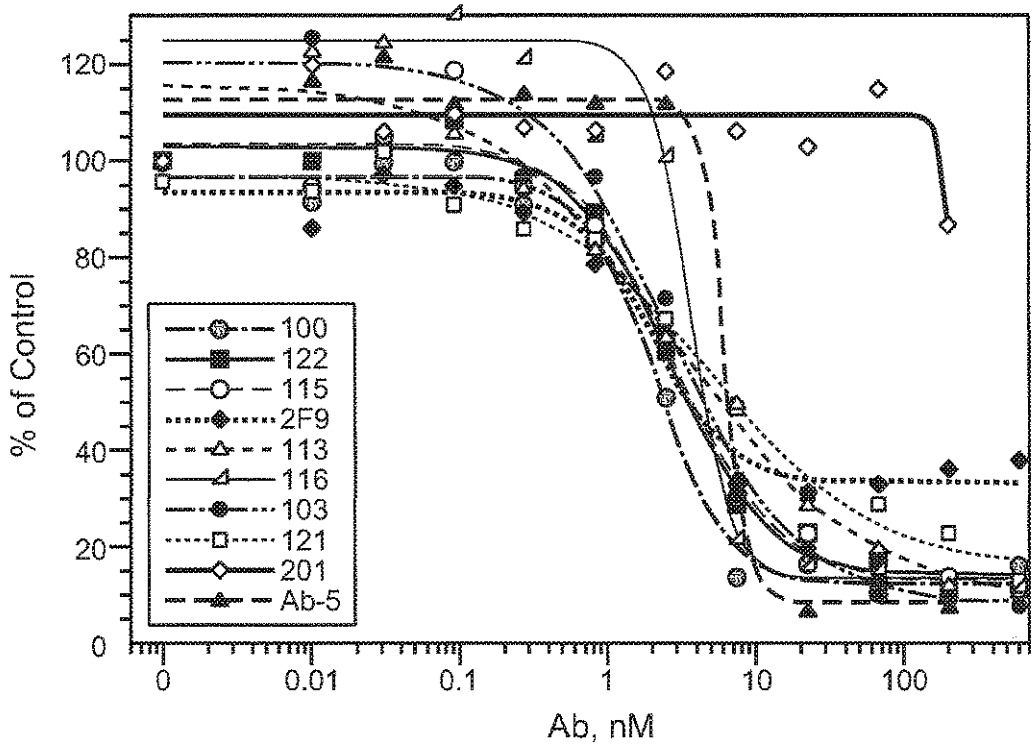

% of Control
120
100
80
60
40
20
0
0
0.01
0.1
1
10
100
Ab, nM
100
122
115
2F9
113
116
103
121
201
Ab-5

FIG. 4

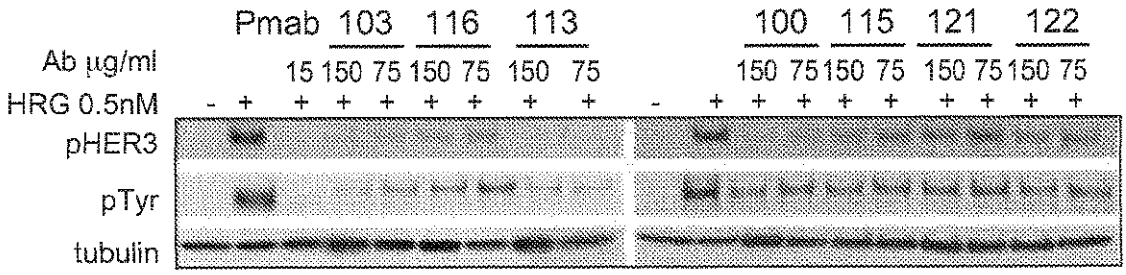

Pmab 103 116 113 100 115 121 122
Ab µg/ml
15 150 75 150 75 150 75 150 75 150 75 150 75 150 75
HRG 0.5nM
- + + + + + + + + - + + + + + + + + +
pHER3
pTyr
tubulin

FIG. 5

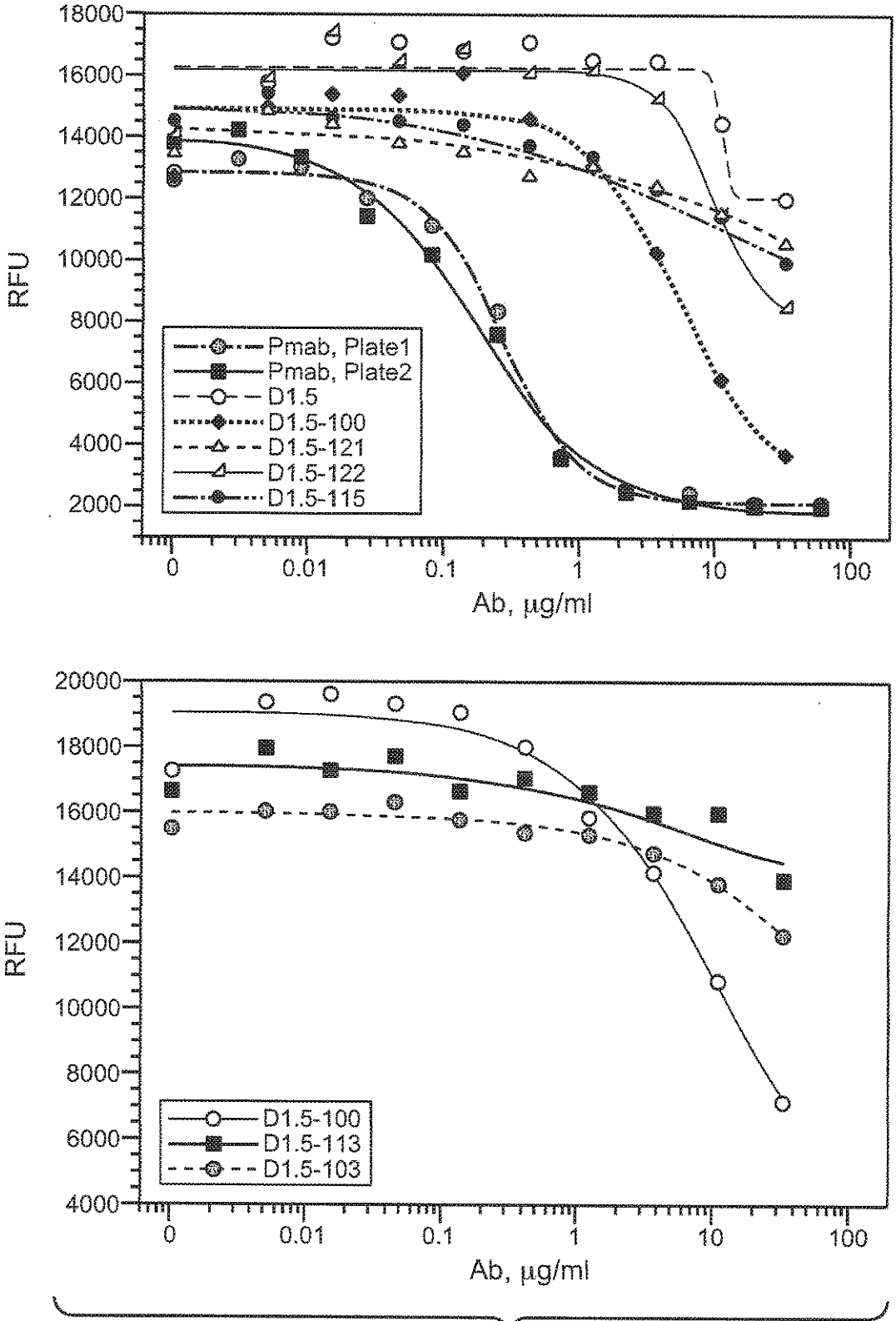
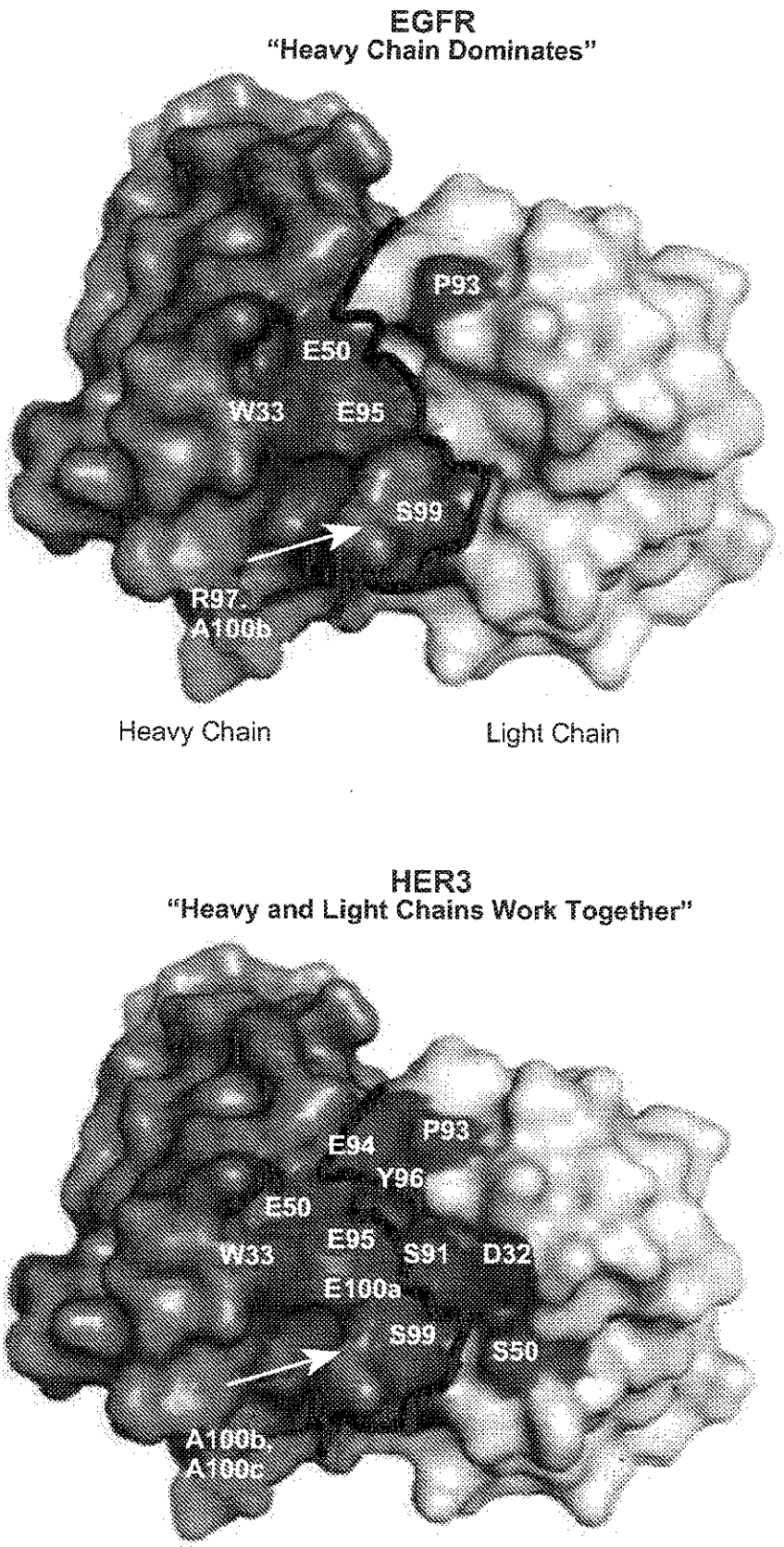

RFU
Ab, µg/ml
Pmab, Plate1
Pmab, Plate2
D1.5
D1.5-100
D1.5-121
D1.5-122
D1.5-115
D1.5-100
D1.5-113
D1.5-103

FIG. 6

FIG. 7


EGFR
"Heavy Chain Dominates"
P93
E50
W33
E95
S99
R97,
A100b
Heavy Chain
Light Chain
HER3
"Heavy and Light Chains Work Together"
P93
E94
Y96
E50
W33
E95
S91
D32
E100a
S99
S50
A100b,
A100c

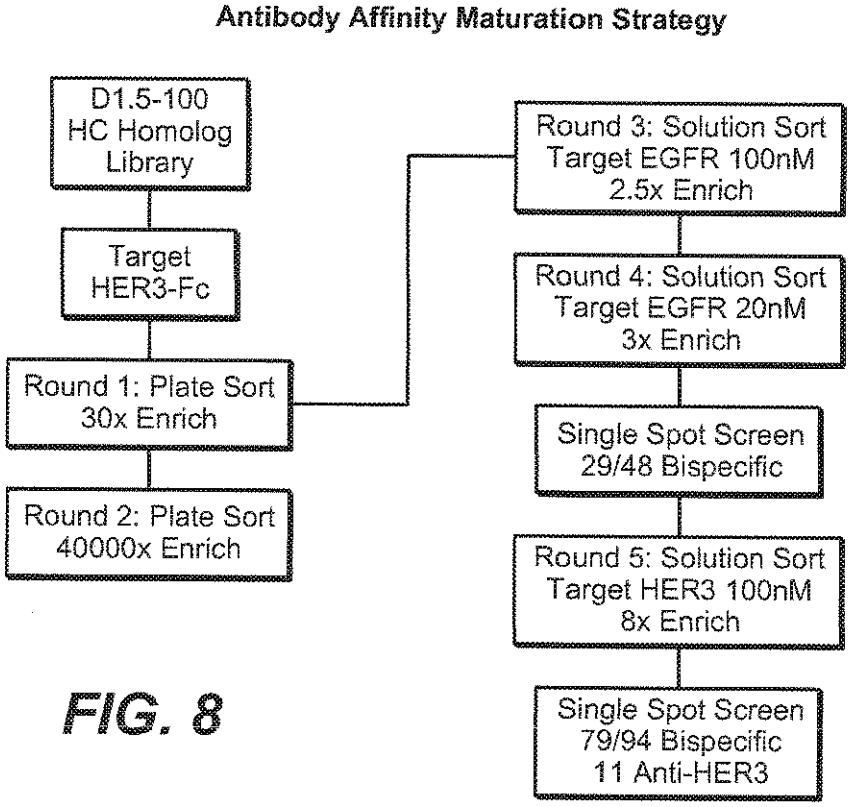

Antibody Affinity Maturation Strategy
D1.5-100 HC Homolog Library
Target HER3-Fc
Round 1: Plate Sort 30x Enrich
Round 2: Plate Sort 40000x Enrich
Round 3: Solution Sort Target EGFR 100nM 2.5x Enrich
Round 4: Solution Sort Target EGFR 20nM 3x Enrich
Single Spot Screen 29/48 Bispecific
Round 5: Solution Sort Target HER3 100nM 8x Enrich
Single Spot Screen 79/94 Bispecific 11 Anti-HER3

FIG. 8

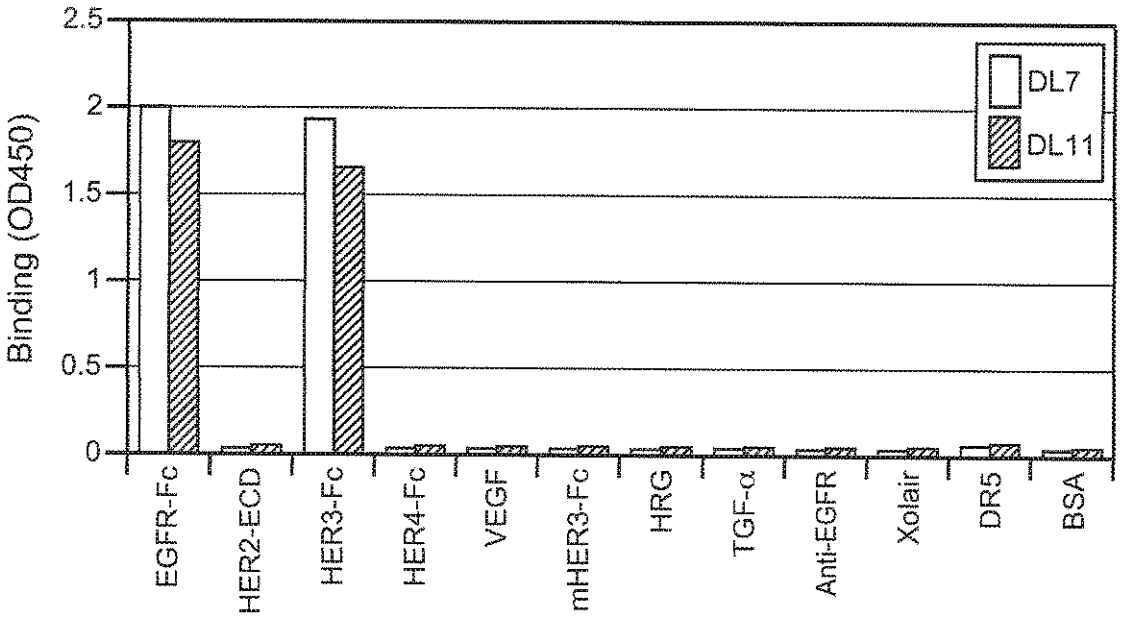

Binding (OD450)
2.5
2
1.5
1
0.5
0
DL7
DL11
EGFR-Fc
HER2-ECD
HER3-Fc
HER4-Fc
VEGF
mHER3-Fc
HRG
TGF-α
Anti-EGFR
Xolair
DR5
BSA

FIG. 9

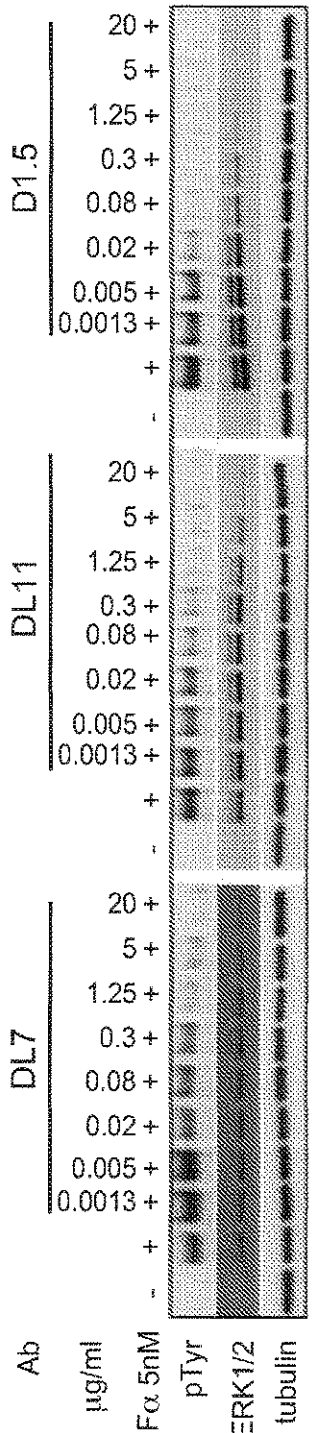


FIG. 10A

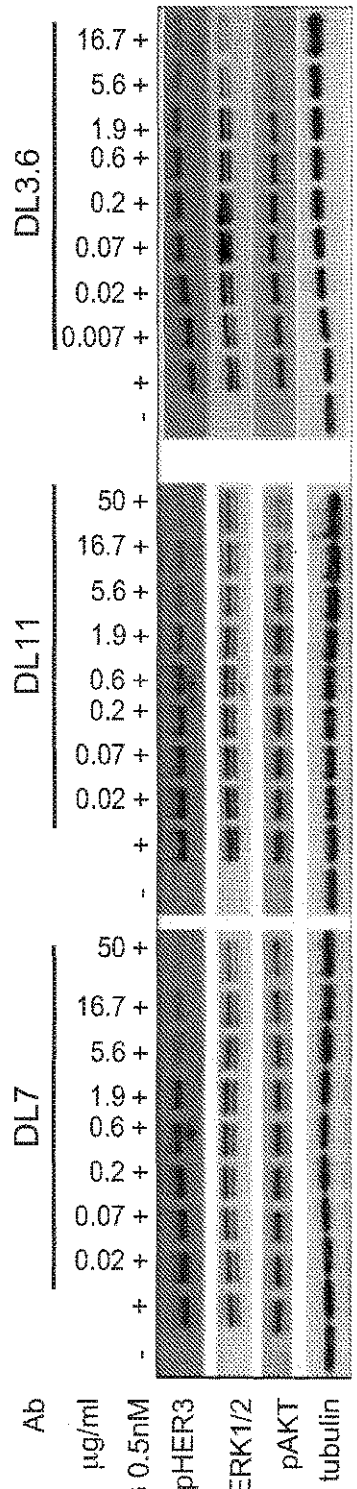
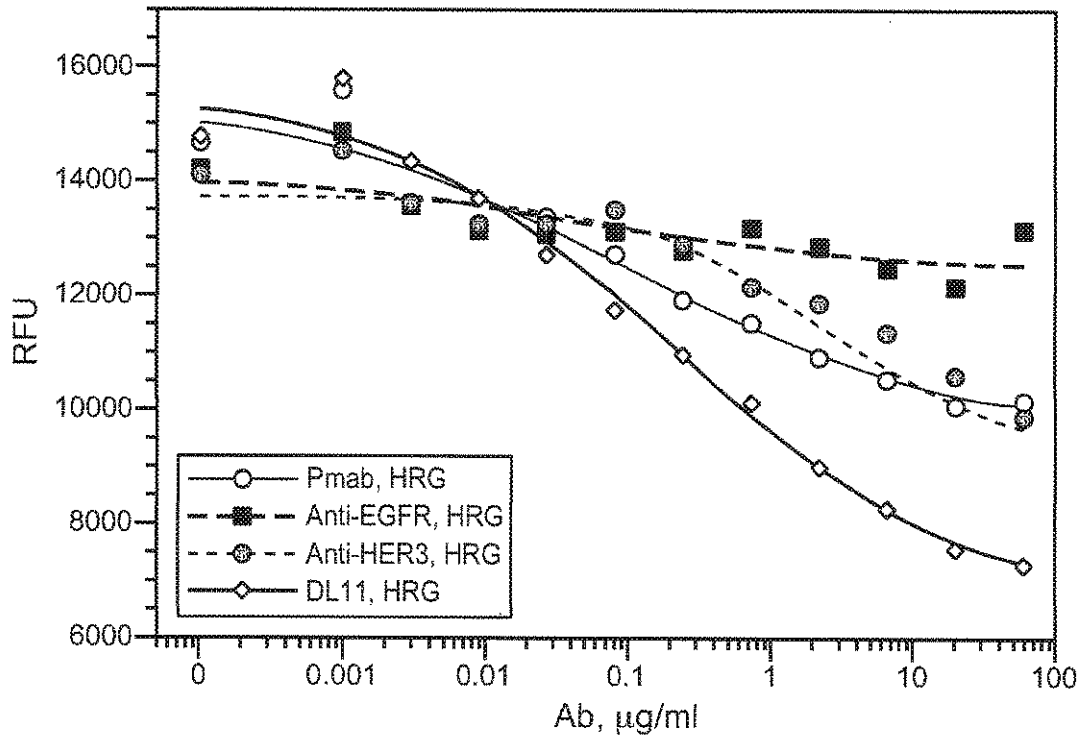


FIG. 10B


16000
14000
12000
10000
8000
6000
RFU
Pmab, HRG
Anti-EGFR, HRG
Anti-HER3, HRG
DL11, HRG
0
0.001
0.01
0.1
1
10
100
Ab, µg/ml

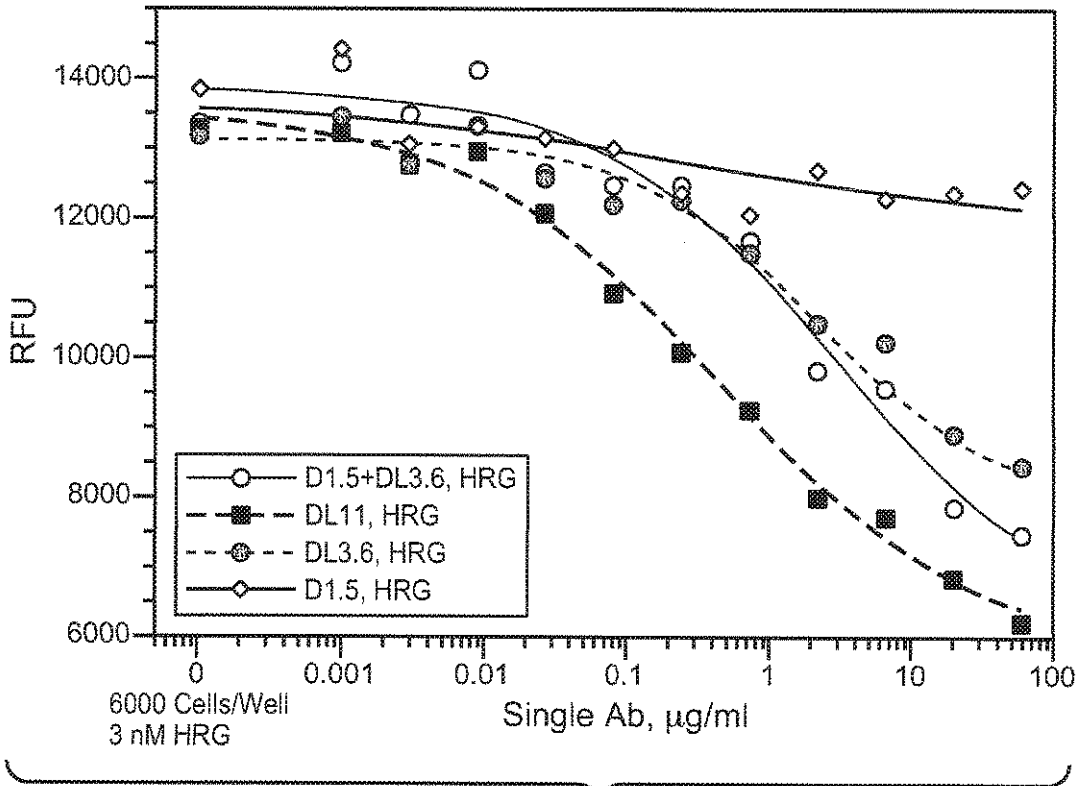
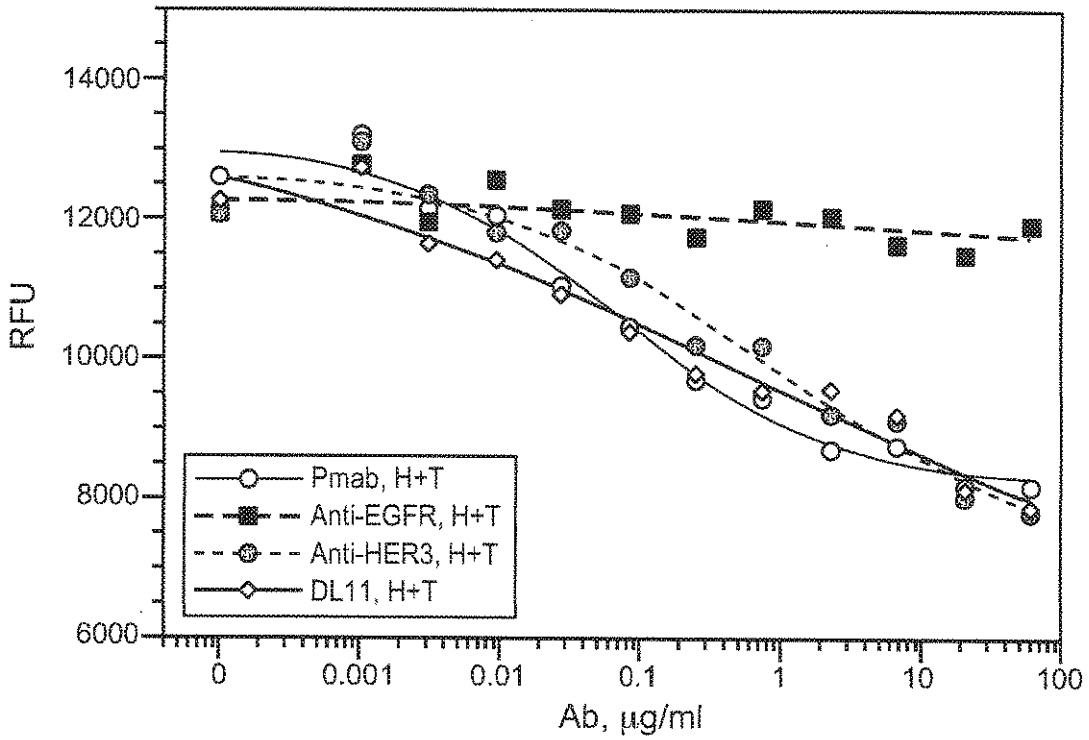

14000
12000
10000
8000
6000
RFU
D1.5+DL3.6, HRG
DL11, HRG
DL3.6, HRG
D1.5, HRG
0
0.001
0.01
0.1
1
10
100
6000 Cells/Well
3 nM HRG
Single Ab, µg/ml

FIG. 11A


14000
12000
10000
8000
6000
RFU
Pmab, H+T
Anti-EGFR, H+T
Anti-HER3, H+T
DL11, H+T
0
0.001
0.01
0.1
1
10
100
Ab, µg/ml

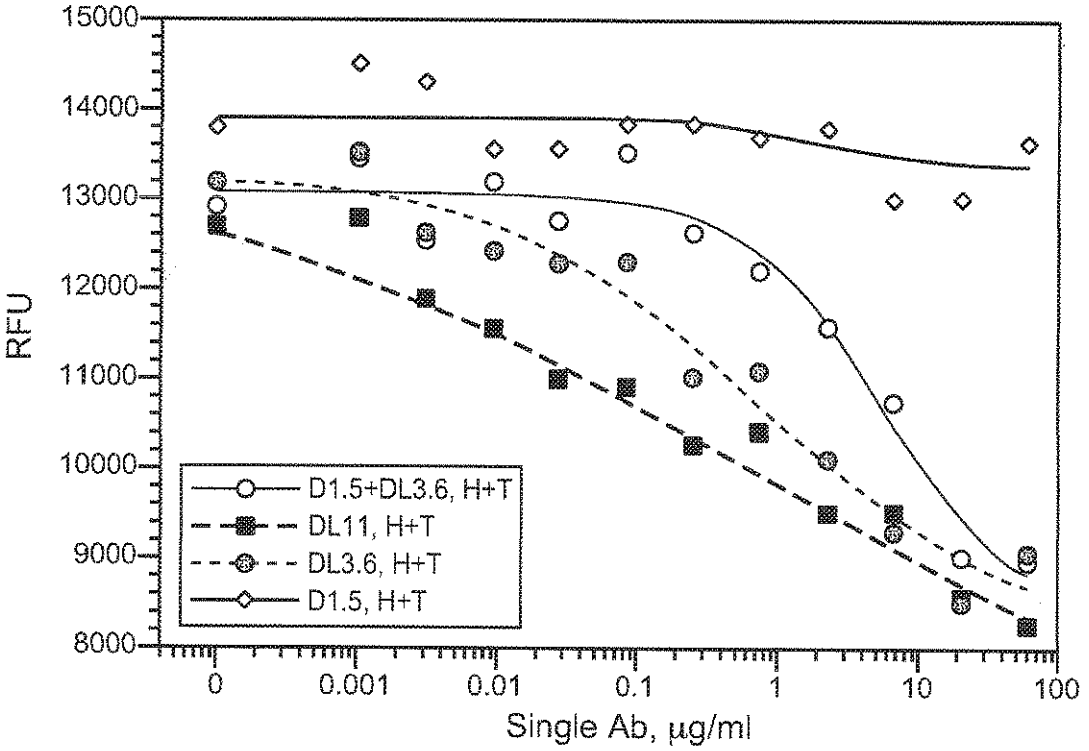
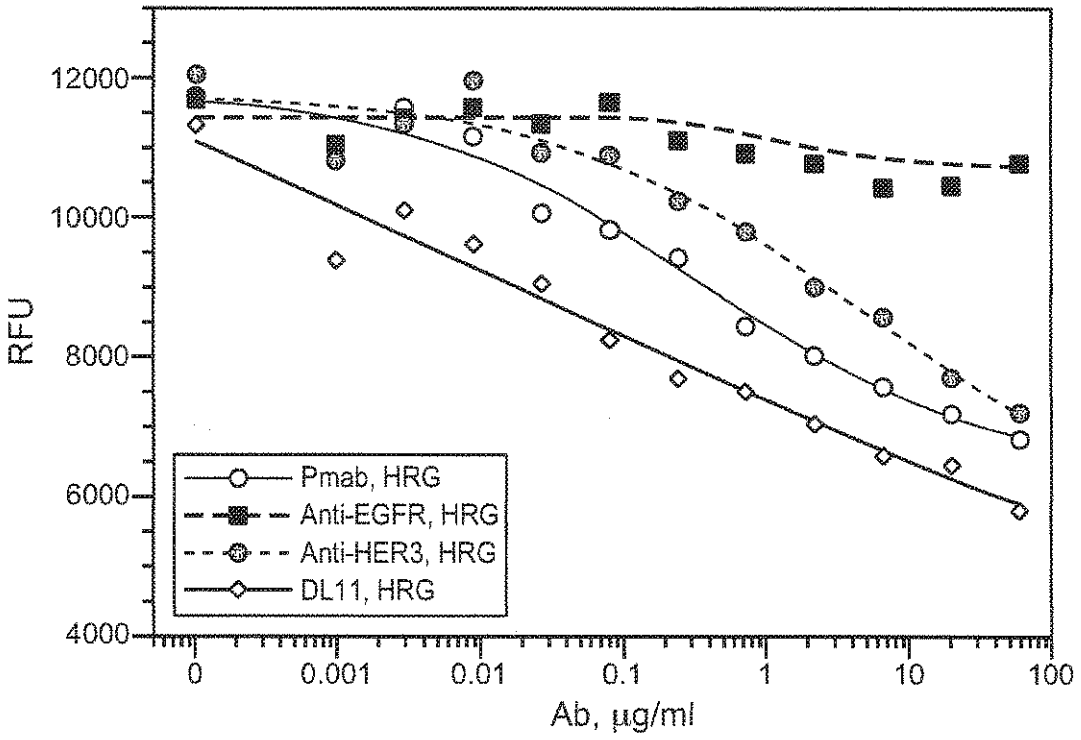

15000
14000
13000
12000
11000
10000
9000
8000
RFU
D1.5+DL3.6, H+T
DL11, H+T
DL3.6, H+T
D1.5, H+T
0
0.001
0.01
0.1
1
10
100
Single Ab, µg/ml

FIG. 11B


12000
10000
8000
6000
4000
RFU
Pmab, HRG
Anti-EGFR, HRG
Anti-HER3, HRG
DL11, HRG
0
0.001
0.01
0.1
1
10
100
Ab, µg/ml

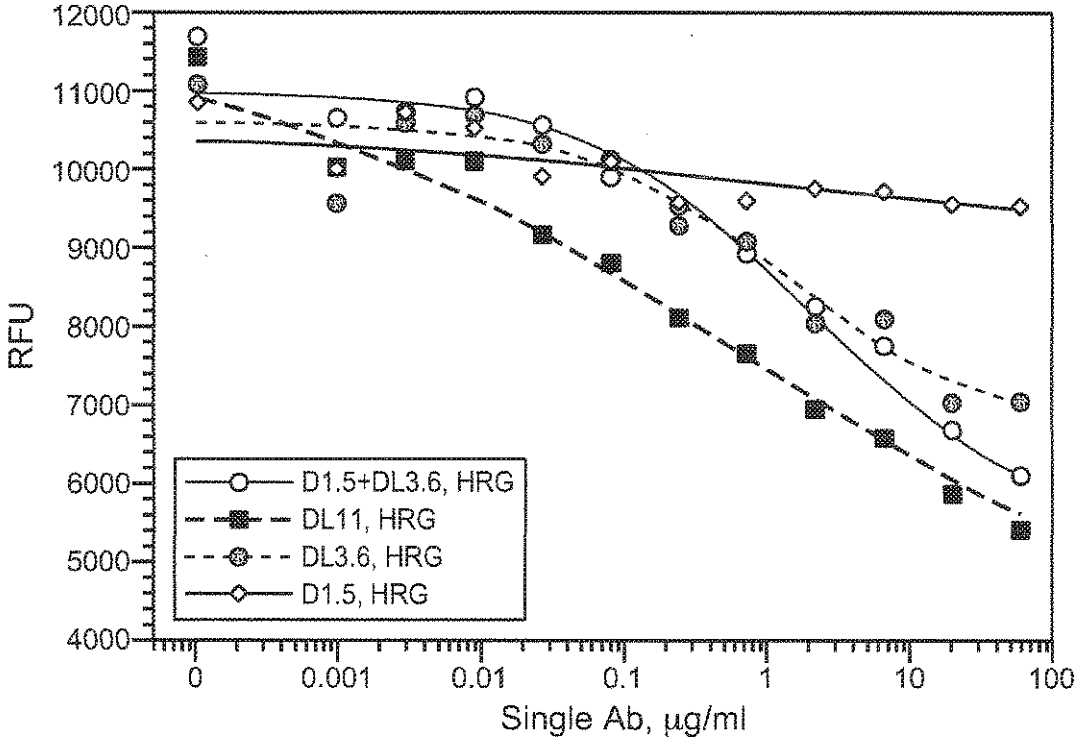
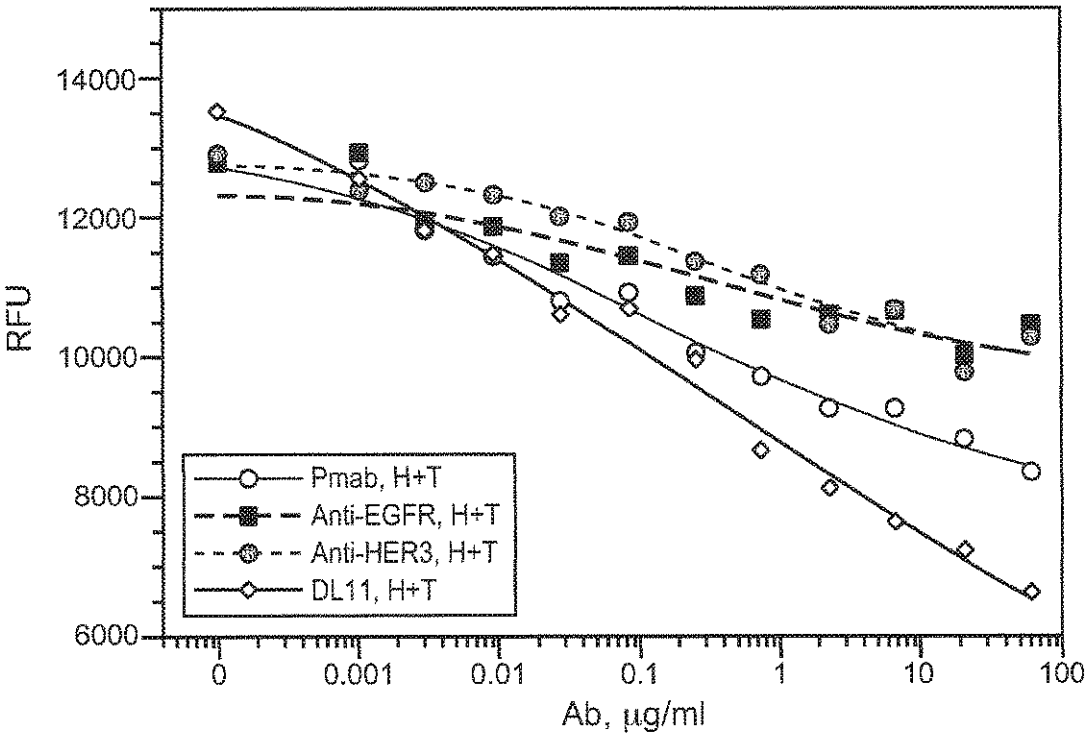

12000
11000
10000
9000
8000
7000
6000
5000
4000
RFU
D1.5+DL3.6, HRG
DL11, HRG
DL3.6, HRG
D1.5, HRG
0
0.001
0.01
0.1
1
10
100
Single Ab, µg/ml

FIG. 12A


14000
12000
10000
8000
6000
RFU
Pmab, H+T
Anti-EGFR, H+T
Anti-HER3, H+T
DL11, H+T
0
0.001
0.01
0.1
1
10
100
Ab, µg/ml

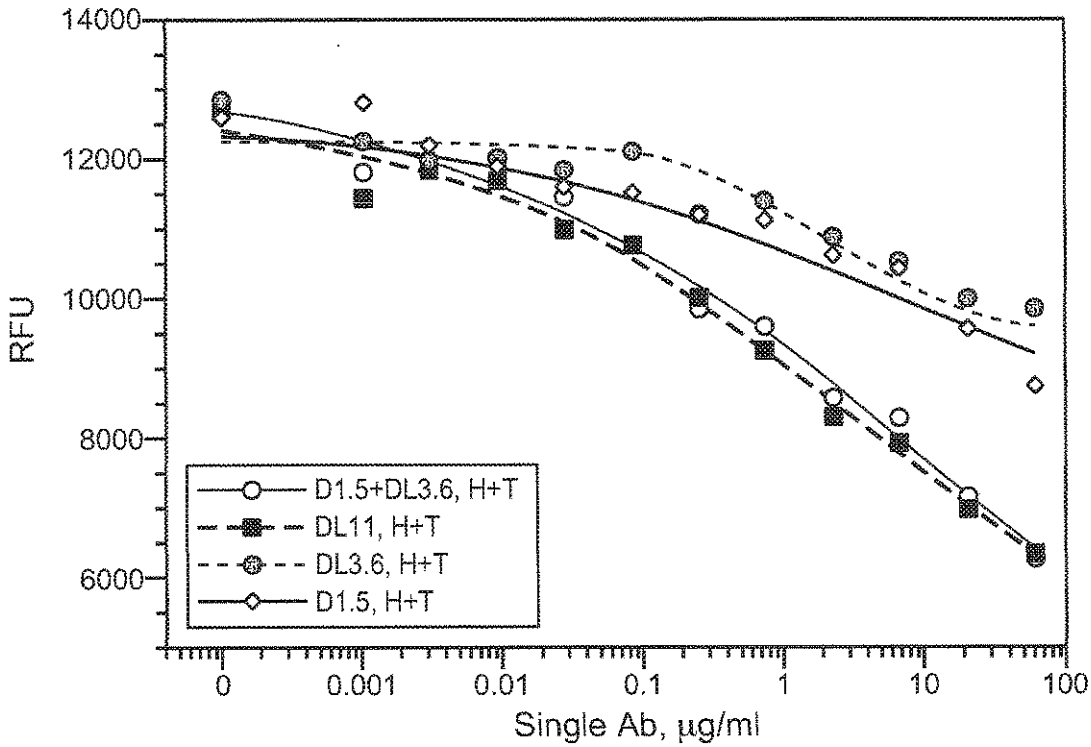

14000
12000
10000
8000
6000
RFU
D1.5+DL3.6, H+T
DL11, H+T
DL3.6, H+T
D1.5, H+T
0
0.001
0.01
0.1
1
10
100
Single Ab, µg/ml

FIG. 12B

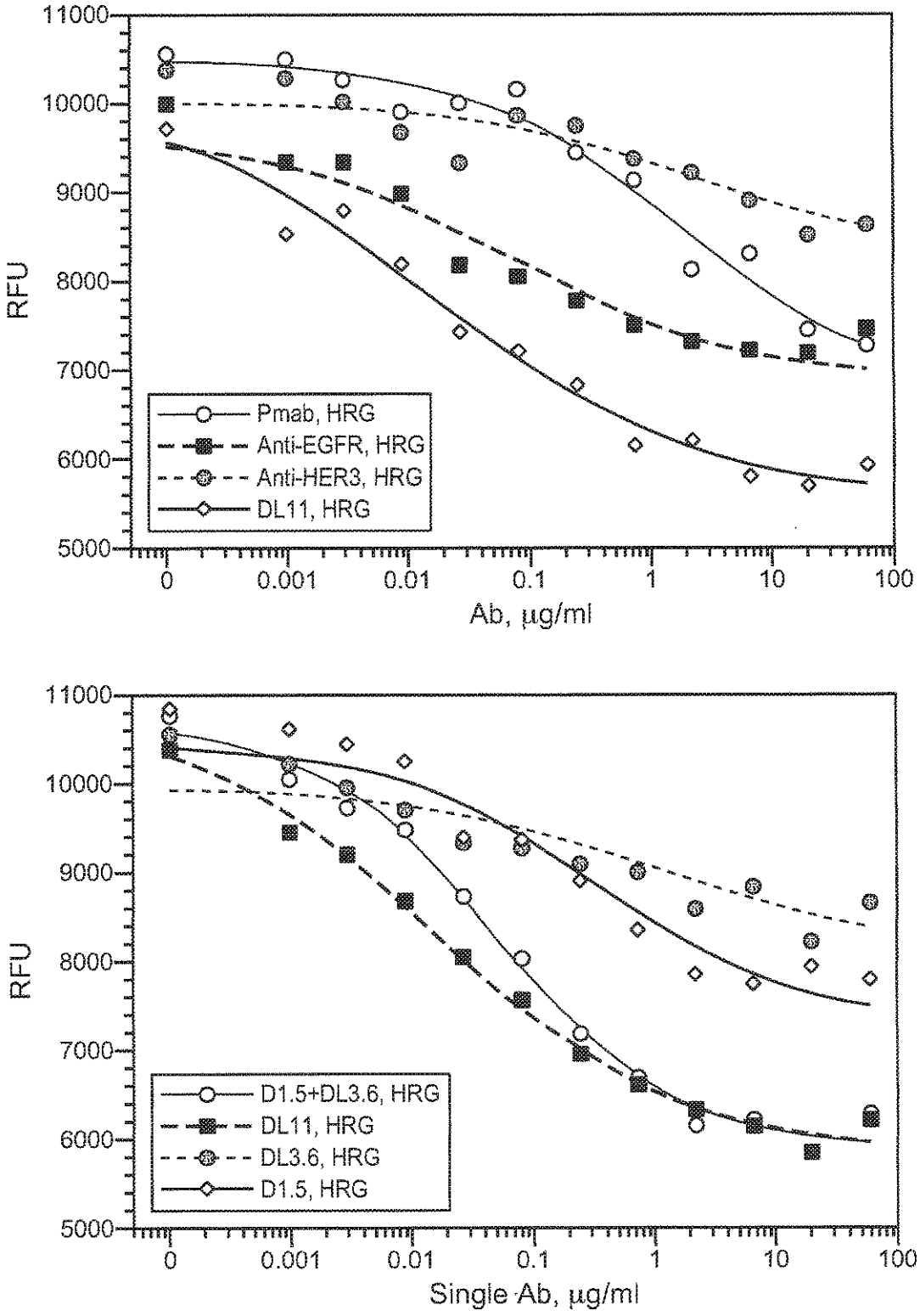

11000
10000
9000
8000
7000
6000
5000
RFU
Pmab, HRG
Anti-EGFR, HRG
Anti-HER3, HRG
DL11, HRG
0
0.001
0.01
0.1
1
10
100
Ab, µg/ml
11000
10000
9000
8000
7000
6000
5000
RFU
D1.5+DL3.6, HRG
DL11, HRG
DL3.6, HRG
D1.5, HRG
0
0.001
0.01
0.1
1
10
100
Single Ab, µg/ml

FIG. 13

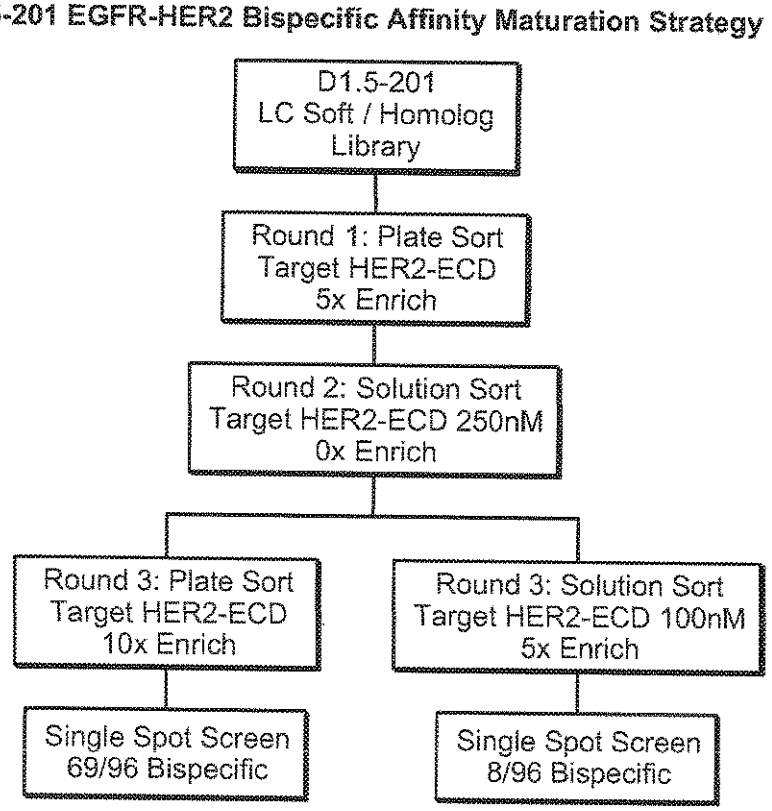

D1.5-201 EGFR-HER2 Bispecific Affinity Maturation Strategy
D1.5-201
LC Soft / Homolog
Library
Round 1: Plate Sort
Target HER2-ECD
5x Enrich
Round 2: Solution Sort
Target HER2-ECD 250nM
0x Enrich
Round 3: Plate Sort
Target HER2-ECD
10x Enrich
Round 3: Solution Sort
Target HER2-ECD 100nM
5x Enrich
Single Spot Screen
69/96 Bispecific
Single Spot Screen
8/96 Bispecific

FIG. 14

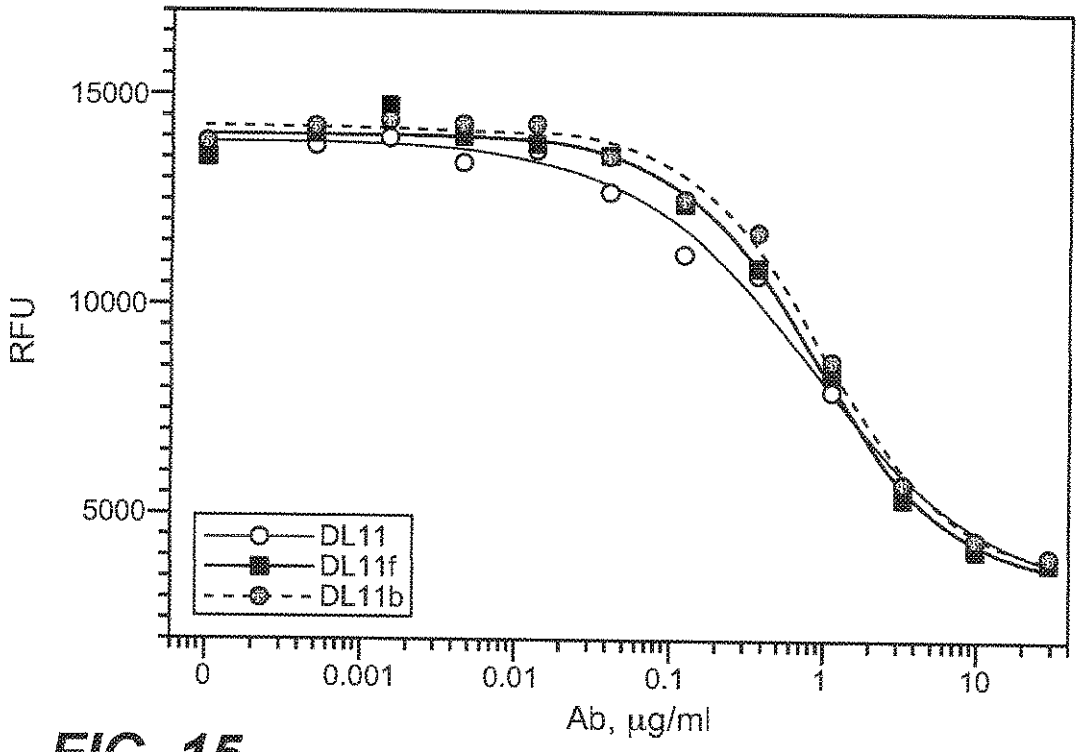

15000
10000
5000
RFU
DL11
DL11f
DL11b
0
0.001
0.01
0.1
1
10
Ab, µg/ml

FIG. 15

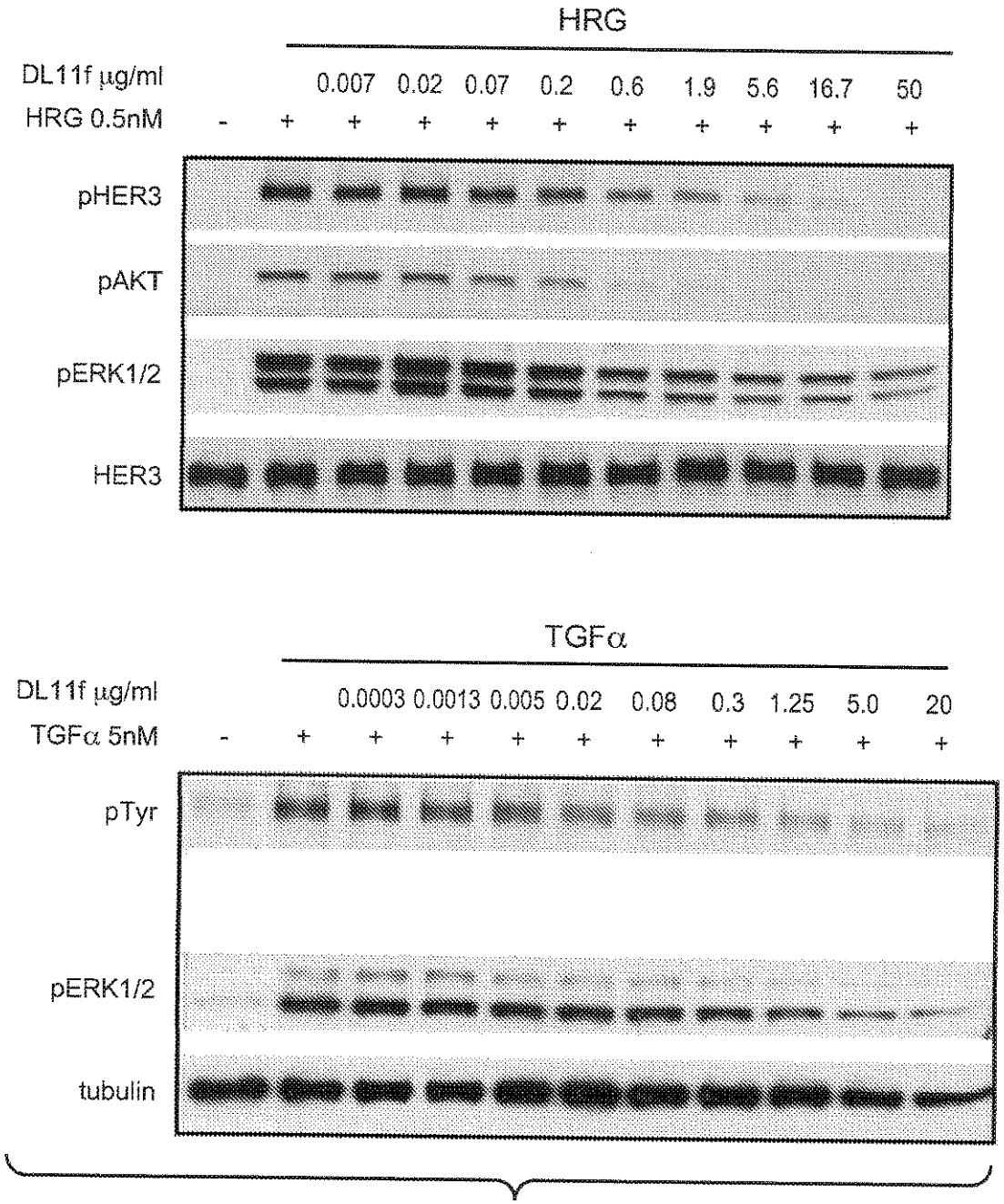

HRG
DL11f µg/ml
0.007 0.02 0.07 0.2 0.6 1.9 5.6 16.7 50
HRG 0.5nM
- + + + + + + + + + +
pHER3
pAKT
pERK1/2
HER3
TGFα
DL11f µg/ml
0.0003 0.0013 0.005 0.02 0.08 0.3 1.25 5.0 20
TGFα 5nM
- + + + + + + + + + +
pTyr
pERK1/2
tubulin

FIG. 16

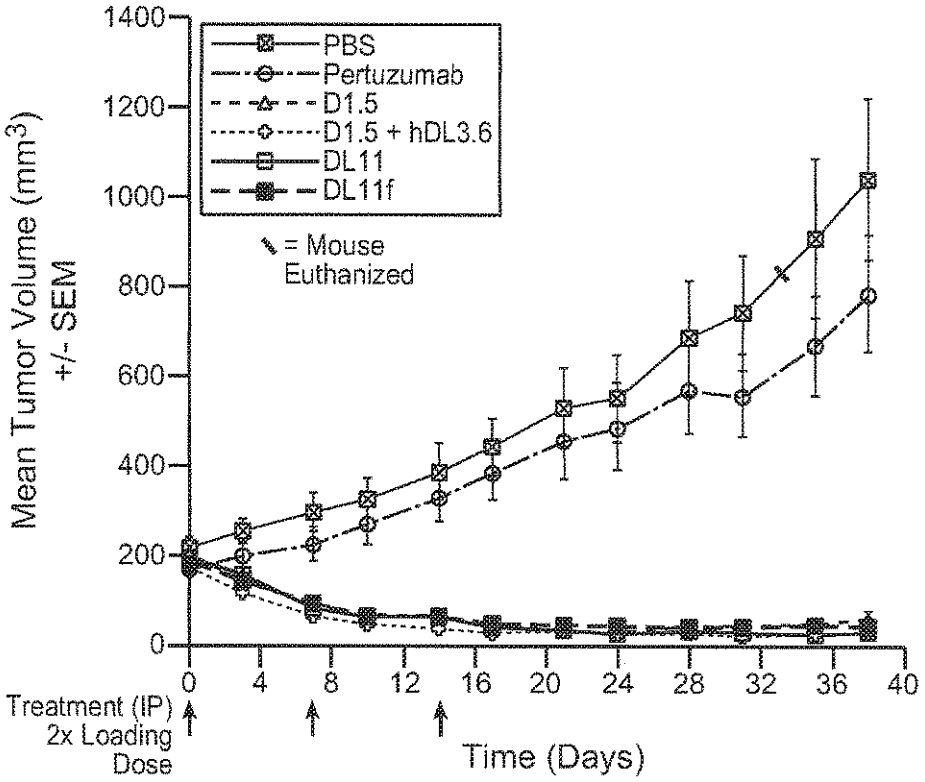

PBS
Pertuzumab
D1.5
D1.5 + hDL3.6
DL11
DL11f
= Mouse Euthanized
Mean Tumor Volume (mm3) +/- SEM
1400
1200
1000
800
600
400
200
0
0 4 8 12 16 20 24 28 32 36 40
Treatment (IP) 2x Loading Dose
Time (Days)

FIG. 17

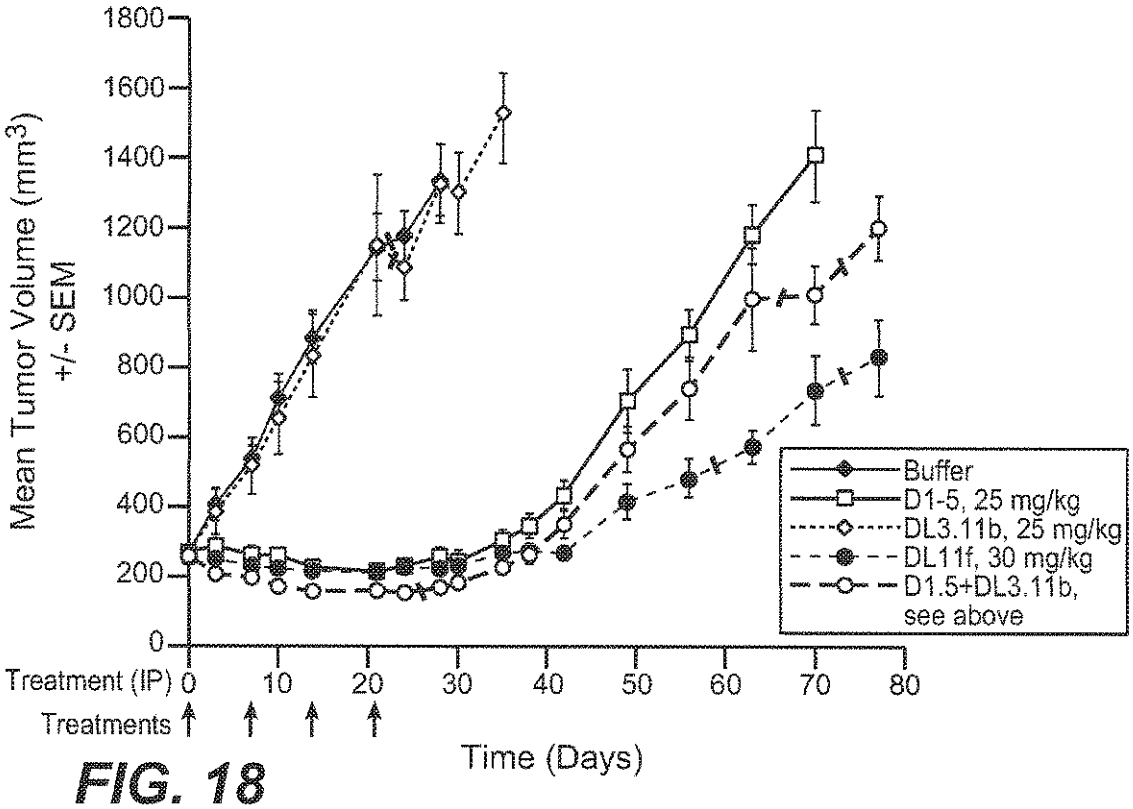

Buffer
D1-5, 25 mg/kg
DL3.11b, 25 mg/kg
DL11f, 30 mg/kg
D1.5+DL3.11b, see above
Mean Tumor Volume (mm3) +/- SEM
1800
1600
1400
1200
1000
800
600
400
200
0
Treatment (IP) 0 10 20 30 40 50 60 70 80
Treatments
Time (Days)

FIG. 18

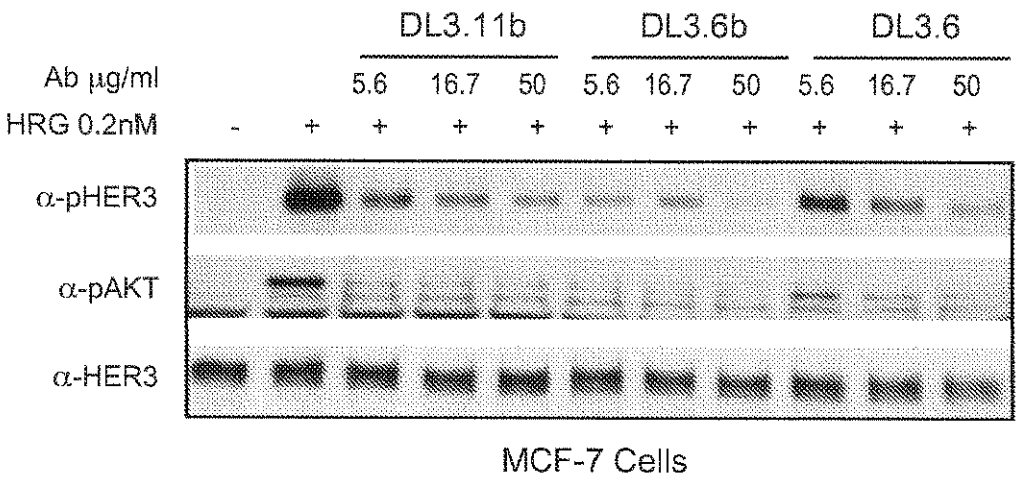

DL3.11b
DL3.6b
DL3.6
Ab µg/ml
5.6 16.7 50 5.6 16.7 50 5.6 16.7 50
HRG 0.2nM
- + + + + + + + + + +
α-pHER3
α-pAKT
α-HER3
MCF-7 Cells

FIG. 19

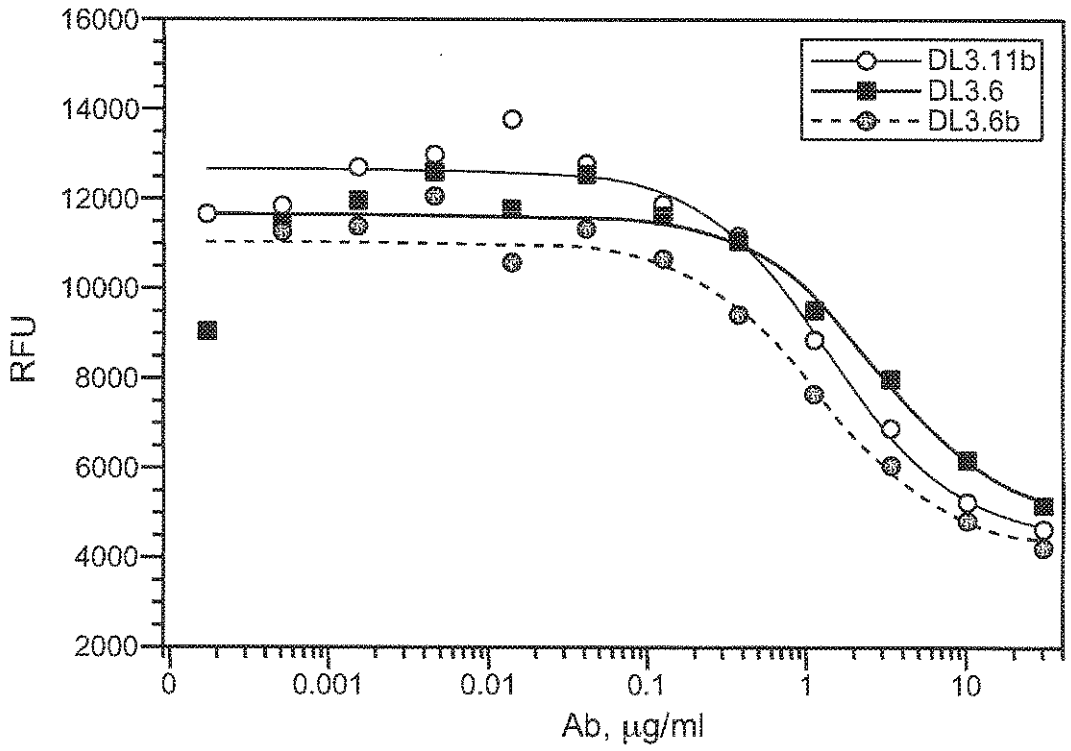

16000
14000
12000
10000
8000
6000
4000
2000
RFU
0
0.001
0.01
0.1
1
10
Ab, µg/ml
DL3.11b
DL3.6
DL3.6b

FIG. 20

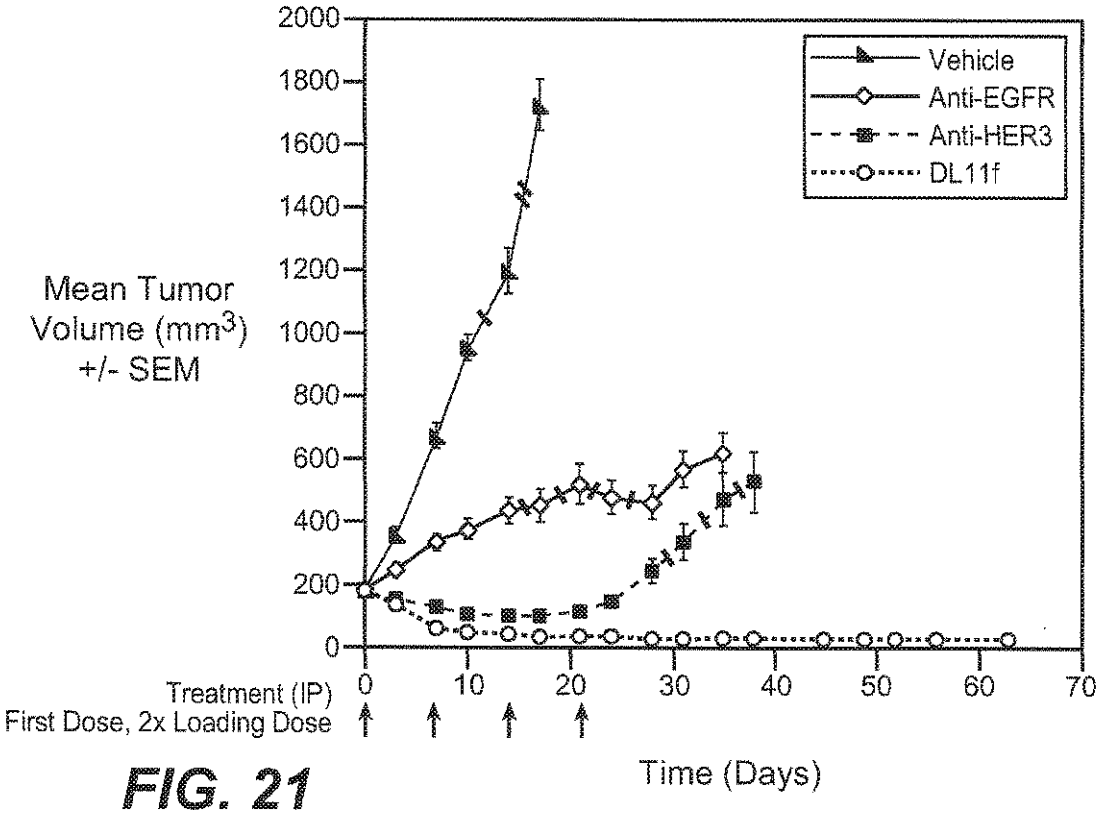

Mean Tumor Volume (mm3) +/- SEM
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Vehicle
Anti-EGFR
Anti-HER3
DL11f
Treatment (IP)
First Dose, 2x Loading Dose
0 10 20 30 40 50 60 70
Time (Days)

FIG. 21

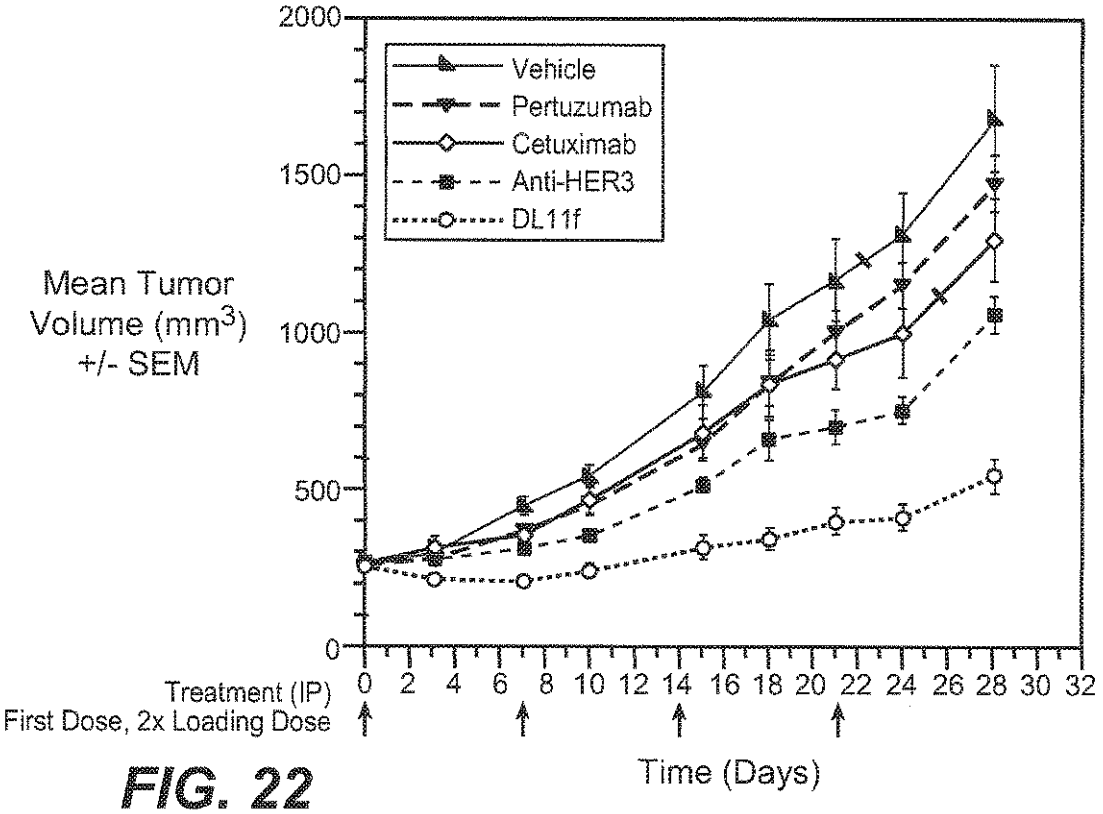

Mean Tumor Volume (mm3) +/- SEM
2000
1500
1000
500
0
Vehicle
Pertuzumab
Cetuximab
Anti-HER3
DL11f
Treatment (IP)
First Dose, 2x Loading Dose
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32
Time (Days)

FIG. 22

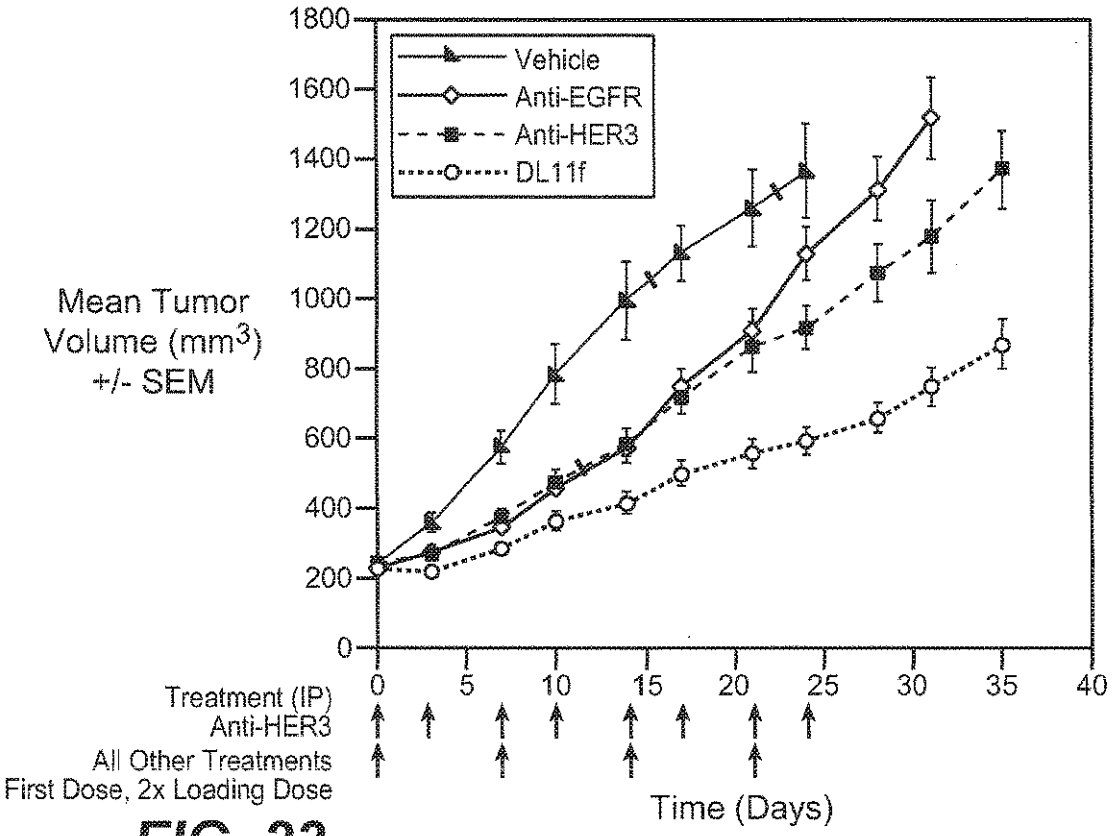

Vehicle
Anti-EGFR
Anti-HER3
DL11f
Mean Tumor Volume (mm3) +/- SEM
Treatment (IP)
Anti-HER3
All Other Treatments
First Dose, 2x Loading Dose
Time (Days)

FIG. 23

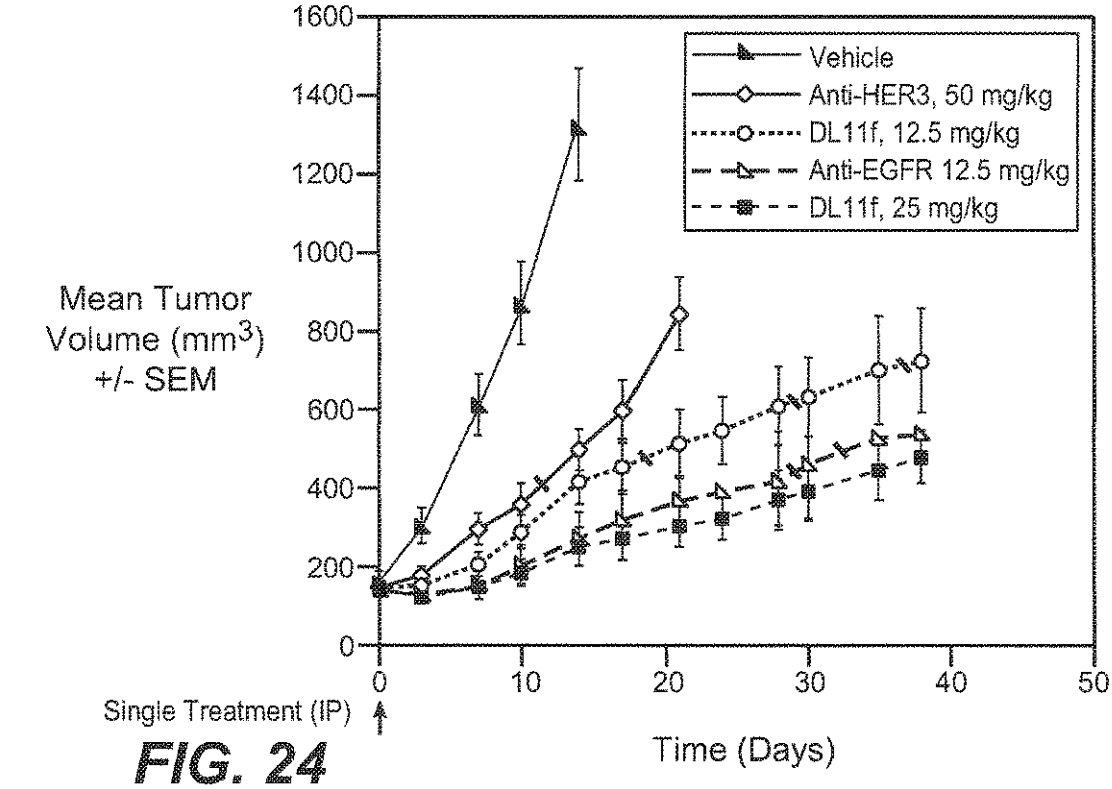

Vehicle
Anti-HER3, 50 mg/kg
DL11f, 12.5 mg/kg
Anti-EGFR 12.5 mg/kg
DL11f, 25 mg/kg
Mean Tumor Volume (mm3) +/- SEM
Single Treatment (IP)
Time (Days)

FIG. 24

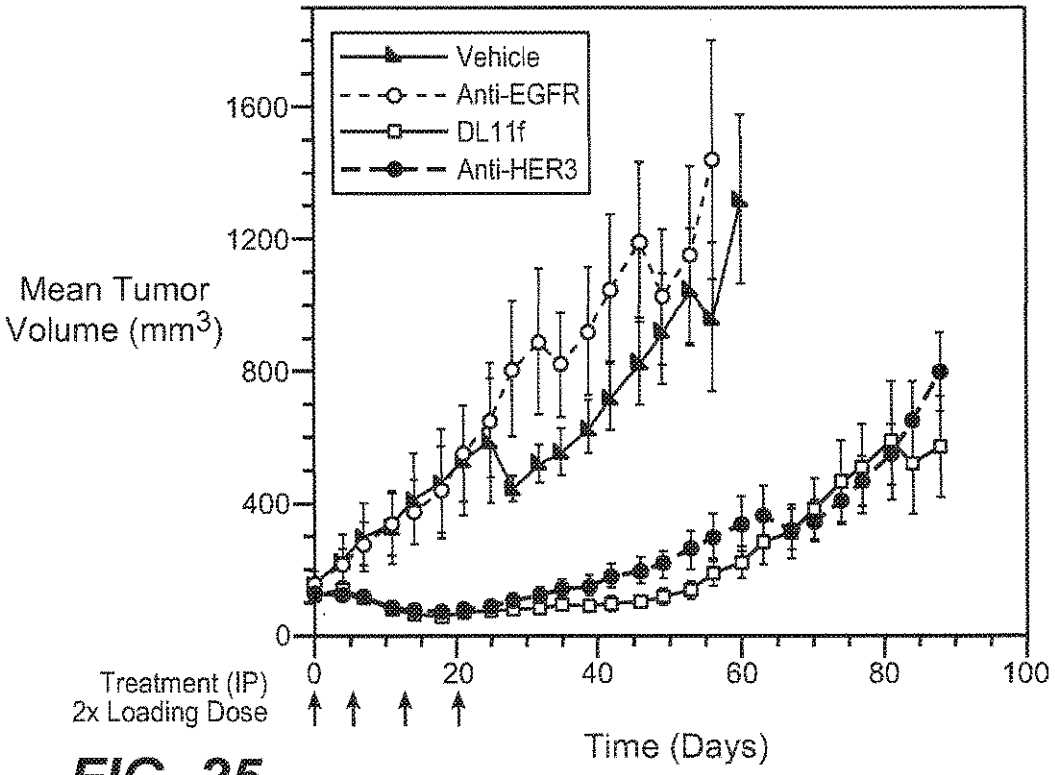

Vehicle
Anti-EGFR
DL11f
Anti-HER3
Mean Tumor Volume (mm3)
1600
1200
800
400
0
0
20
40
60
80
100
Treatment (IP)
2x Loading Dose
Time (Days)

FIG. 25

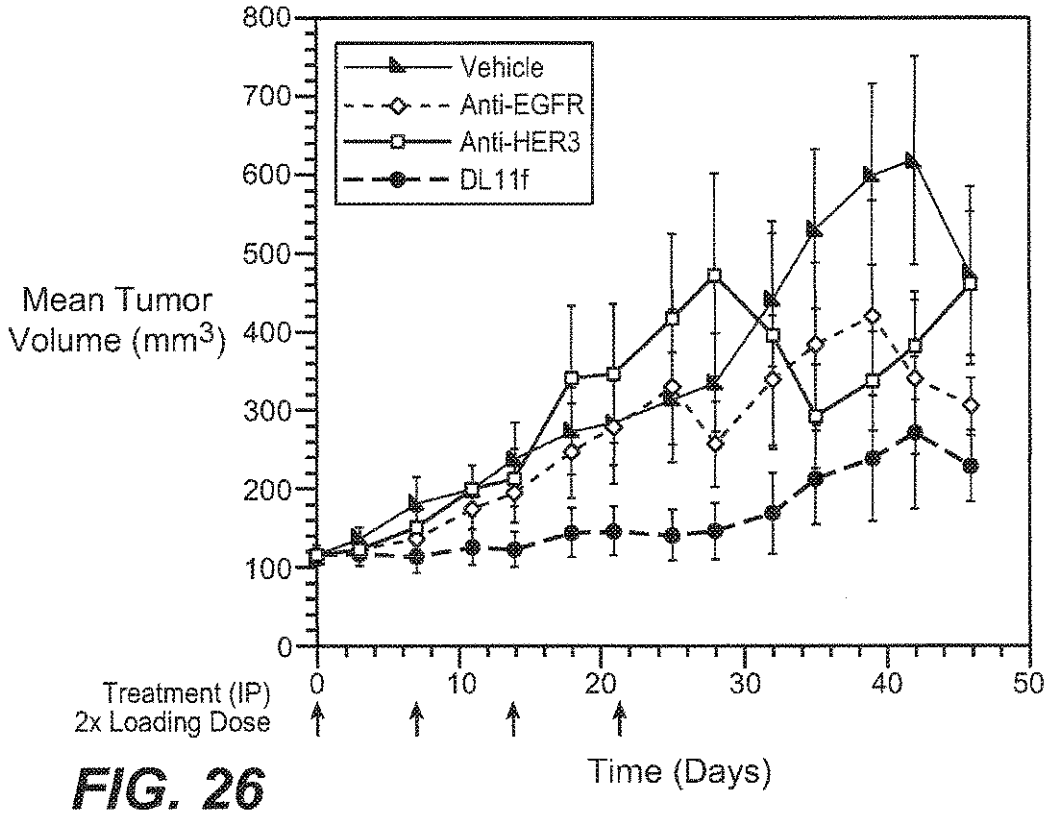

Vehicle
Anti-EGFR
Anti-HER3
DL11f
Mean Tumor Volume (mm3)
800
700
600
500
400
300
200
100
0
0
10
20
30
40
50
Treatment (IP)
2x Loading Dose
Time (Days)

FIG. 26

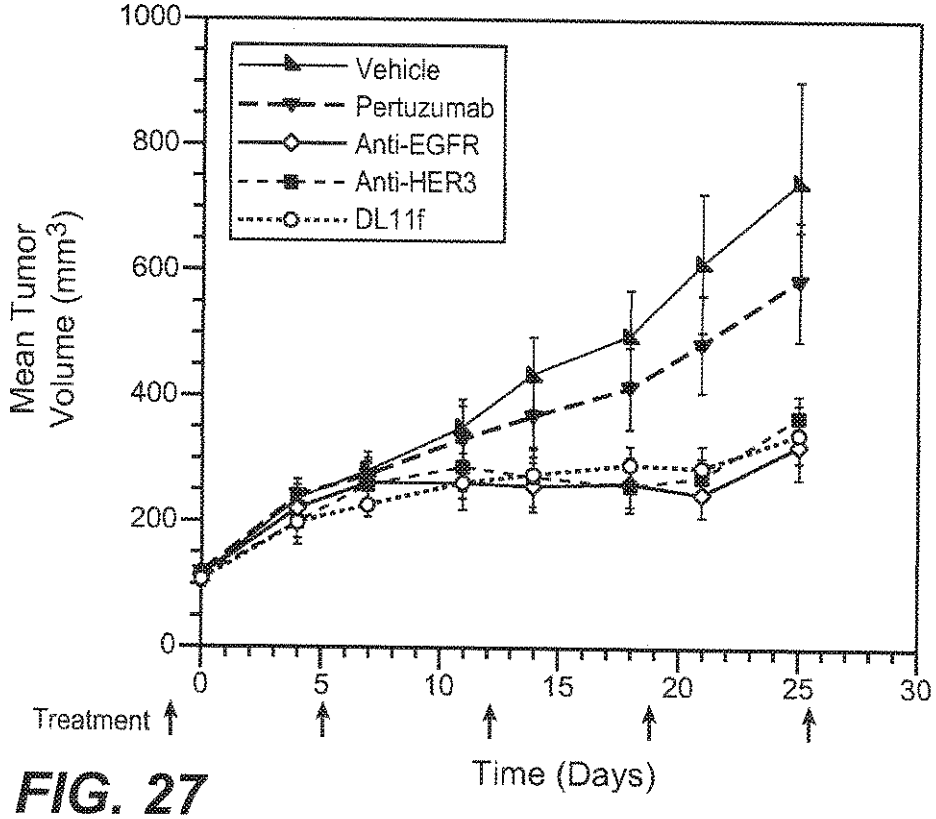

Vehicle
Pertuzumab
Anti-EGFR
Anti-HER3
DL11f
Mean Tumor Volume (mm^3)
1000
800
600
400
200
0
0
5
10
15
20
25
30
Treatment
Time (Days)

FIG. 27

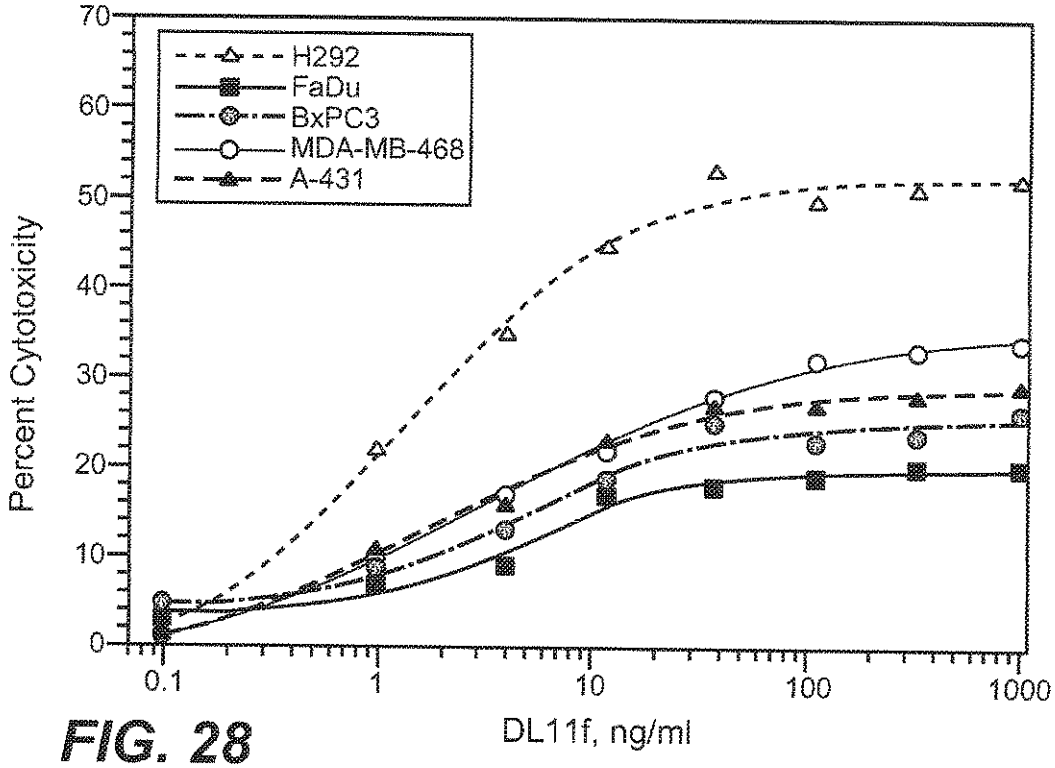

H292
FaDu
BxPC3
MDA-MB-468
A-431
Percent Cytotoxicity
70
60
50
40
30
20
10
0
0.1
1
10
100
1000
DL11f, ng/ml

FIG. 28

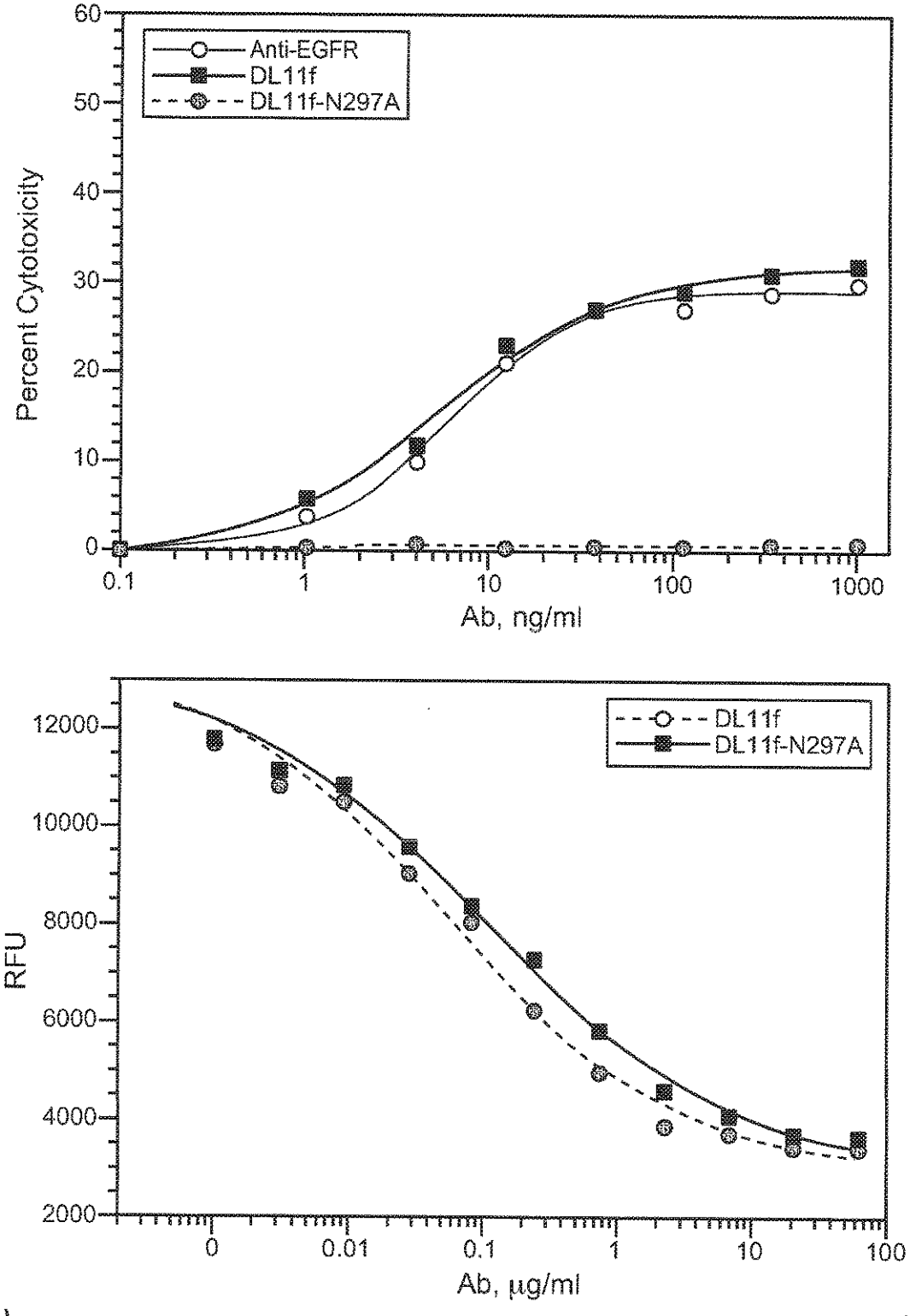

Anti-EGFR
DL11f
DL11f-N297A
Percent Cytotoxicity
Ab, ng/ml
DL11f
DL11f-N297A
RFU
Ab, µg/ml

FIG. 29

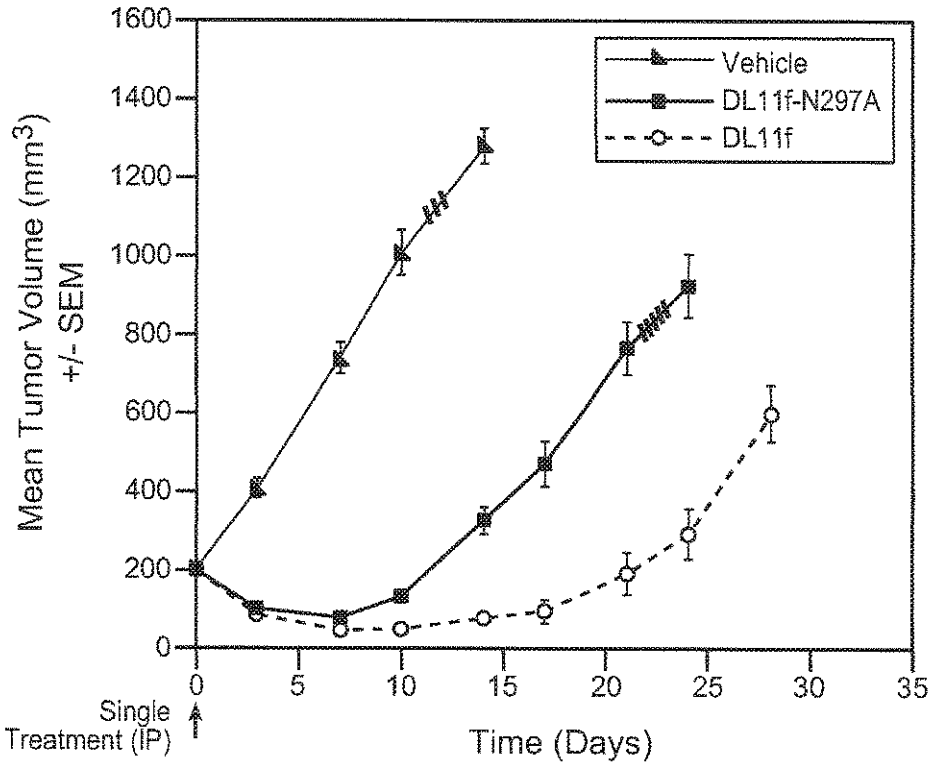

Mean Tumor Volume (mm3)
+/- SEM
1600
1400
1200
1000
800
600
400
200
0
0
5
10
15
20
25
30
35
Single
Treatment (IP)
Time (Days)
Vehicle
DL11f-N297A
DL11f

FIG. 30

EGFR Antagonist	Nonclinical Data	Clinical Data
ERBITUX® (cetuximab) Imclone (BLA No.: 125084) Recombinant human/mouse chimeric monoclonal antibody that bind specifically to extracellular domain of EGFR	9 months repeat-dose toxicity study conducted in cynomolgus monkeys. Doses and regimen: Administered once weekly for 9 months at doses approx. 0.4-4 X's (7.5, 24 and 75 mg/kg/week) above weekly human exposure based on BSA Major test article-related tox: Mild to severe skin lesions (scale formation, erythema, dermatitis, fissures, wounds, exanthema on various parts of body) at all dose levels. Severity and onset was dependent on dose. Onset for high, mid and low doses were on Study Days 15, 22 and 64, respectively. Secondary complication of severe skin lesions was bacterial infection or sepsis with subsequent euthanasia of 50% of animals in moribund condition in high dose group.	Dosing regimen for cetuximab was the same for all trials: On Day 1, test dose of 20 mg was given following by 400 mg/m2 initial dose and then 250 mg/m2 dose for the duration of radiation therapy (6-7 weeks) or until progression of disease or unacceptable toxicities. Dermatological toxicities (acneform rash, skin drying and fissuring and inflammatory and infectious sequelea (eg. blephantis, cheilitis, cellulitis, cyst) also reported in clinical trials. Secondary complications were reported including S. *aureus* sepsis and abcesses requiring incision and drainage. Squamous cell carcinoma of head and neck clinical trial results: acneform rash was reported in 76% of patients treated with cetuximab alone of which 1% were regarded as severe vs 10% with radiation therapy only. Colorectal cancer trial results: acneform rash was reported in 89% of patients treated with cetuximab of which 11% were regarded as severe.

FIG. 31A

EGFR Antagonist	Nonclinical Data	Clinical Data
TARCEVA® (Erlotinib hydrochloride) OSI Pharms /Genentech (NDA No. 021743) Small molecule which inhibits the intracellular phosphorylation of tyrosine kinase associated with EGFR.	6 months oral toxicity study in Sprague-Dawley rat and 12 months oral toxicity study in Beagle dog were conducted. In the summary of the NDA, target sites of toxicity were listed and dermatological was included in the list. Rat study findings: Doses – 1, 5 and 10 m/kg/day Clinical findings: Skin lesion described as scabs on muzzle from Day 50 onwards in the high dose group. Histopathology findings: degeneration and inflammation of skin in 2/15 males and 2/15 females at 5 mg/kg/day and 11/15 males and 11/15 females at 10 mg/kg/day. No histopath finding for skin in controls. Dog study findings: Doses – 2.5, 7.5 and 15 mg/kg/day Clinical signs: All dose groups included redness of skin (in 2/8, 3/8 and 5/8 dogs, respectively) and redness of buccal mucus membrane (in 4/8, 6/8 and 8/8 dogs, respectively). Time to onset of findings, decreased with increasing dose.	Dosing regimen was 150 mg daily, 2 hours before food ingestion. Clinical trial findings: Generally well tolerated. Most frequently occurring toxicities include skin rash and diarrhea. The latter two toxicities sometimes resulted in dose-reduction or discontinuation of treatment.

FIG. 31B

EGFR Antagonist	Nonclinical Data	Clinical Data
VECTIBIX ® (panitumumab) Amgen (BLA No. 125147) Recombinant fully humanized monoclonal antibody directed against human EGFR	Several repeat dose toxicity studies were conducted in the cynomolgus monkey. Severe dermatologic toxicities were reported in these studies at doses of 7.5, 15, 30 or 60 mg/kg for 4, 13 or 26 weeks treatment duration. 26-week study results: Doses: 7.5, 15 and 30 mg/kg/dose, IV bolus once a week. Summary of findings: Mild to severe dermatologic toxicities (erythema, irritation, crus (often associated with secondary infections), flaky skin (dandruff-like), loss of fur, abrasions, and/or eyelid swelling and eye redness), epidermal sloughing, septicemia and deaths (2, 6, and 6 in LD, MD and HD, respectively) in all dose groups. In addition, papules and/or ulceration/necrosis were sporadically reported in all dose groups. Histopathology findings: Mild to marked hyperkeratosis, accompanied by epidermal acanthosis, parakeratosis in skin of animals in all dose groups. Severity was the same for 15 and 30 mg/kg dose groups and slightly reduced in 7.5 mg/kg dose group. No NOAEL was determined. Doses were 1.25 to 10-fold greater than proposed 6 mg/kg human dose every 2 weeks and approximately 3-24-fold higher than proposed 2.5 mg/kg/week dose when adjusted to body weight of the human.	Dosing regimen was 6 mg/kg daily every 2 weeks until disease progression. Clinical trial findings: One of the most serious adverse events reported was dermatologic toxicities complicated by infections sequelae and septic death. Skin lesions (acneform rash, pruritis, dry skin, exfoliation, skin fissures and paronychia) were reported in 90% of 789 metastatic colorectal cancer patients. These were Grade 2 in severity with 12% of patients having Grade 3 in severity. In patients (not observed nonclinically), Grade 1 or 2 stomatitis and oral mucositis was also reported in 7% of patients. Development of severe dermatologic toxicities did lead to secondary infections (sepsis) and on rare occasions even death but most frequently a dose reduction or interruption was necessary. Labeling review included a Boxed Warning section for dermatologic toxicities.

FIG. 31C

Adverse Avent	Short Name	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Rash/ Desquamation	Rash	Macular or papular eruption or erythema without associated symptoms	Macular or papular eruption or erythema with pruritus or other associated symptoms: or other lesions covering <50% of body surface area (BSA)	Severe, generalized erythroderma or macular, papular or vesicular eruption; desquamation covering >50% BSA	Generalized, exfoliative, ulcerative, or bullous dermatitis	Death
Rash: Acne/aneiform	Acne	Intervention not indicated	Intervention indicated	Associated with pain, disfigurement, ulceration, or desquamation	-	Death

FIG. 32

Kabat#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	A	B	C	D	E	F	28	29	30	31	32	33	34	35	36	37
D1	D	I	Q	M	T	Q	S	P	S	S	L	S	A	S	V	G	D	R	V	T	I	T	C	R	A	S	Q							D	V	S	T	A	V	A	W	Y	Q
D1.5	D	I	Q	M	T	Q	S	P	S	S	L	S	A	S	V	G	D	R	V	T	I	T	C	R	A	S	Q							D	V	S	T	A	V	A	W	Y	Q
D1.5-100	D	I	Q	M	T	Q	S	P	S	S	L	S	A	S	V	G	D	R	V	T	I	T	C	R	A	S	Q							D	L	A	T	D	V	A	W	Y	Q
DL11	D	I	Q	M	T	Q	S	P	S	S	L	S	A	S	V	G	D	R	V	T	I	T	C	R	A	S	Q							D	L	A	T	D	V	A	W	Y	Q
DL11b	D	I	Q	M	T	Q	S	P	S	S	L	S	A	S	V	G	D	R	V	T	I	T	C	R	A	S	Q							N	I	A	T	D	V	A	W	Y	Q
DL11f	D	I	Q	M	T	Q	S	P	S	S	L	S	A	S	V	G	D	R	V	T	I	T	C	R	A	S	Q							N	I	A	T	D	V	A	W	Y	Q

Kabat#	38	39	40	41	42	43	44	45	46	47	48	A	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
D1	Q	K	P	G	K	A	P	K	L	L	I		Y	S	A	S	F	L	Y	S	G	V	P	S	R	F	S	G	S	G	S	G	T	D	F	T	L	T	I	S	S	L	Q	P
D1.5	Q	K	P	G	K	A	P	K	L	L	I		Y	S	A	S	F	L	Y	S	G	V	P	S	R	F	S	G	S	G	S	G	T	D	F	T	L	T	I	S	S	L	Q	P
D1.5-100	Q	K	P	G	K	A	P	K	L	L	I		Y	S	A	S	F	L	Y	S	G	V	P	S	R	F	S	G	S	G	S	G	T	D	F	T	L	T	I	S	S	L	Q	P
DL11	Q	K	P	G	K	A	P	K	L	L	I		Y	S	A	S	F	L	Y	S	G	V	P	S	R	F	S	G	S	G	S	G	T	D	F	T	L	T	I	S	S	L	Q	P
DL11b	Q	K	P	G	K	A	P	K	L	L	I		Y	S	A	S	F	L	Y	S	G	V	P	S	R	F	S	G	S	G	S	G	T	D	F	T	L	T	I	S	S	L	Q	P
DL11f	Q	K	P	G	K	A	P	K	L	L	I		Y	S	A	S	F	L	Y	S	G	V	P	S	R	F	S	G	S	G	S	G	T	D	F	T	L	T	I	S	S	L	Q	P

Kabat#	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	A	B	C	D	E	F	96	97	98	99	100	101	102	103	104	105	106	107	108
D1	E	D	F	A	T	Y	Y	C	Q	Q	S	Y	T	T	P							P	T	F	G	Q	G	T	K	V	E	I	K	R
D1.5	E	D	F	A	T	Y	Y	C	Q	Q	S	Y	P	T	P							Y	T	F	G	Q	G	T	K	V	E	I	K	R
D1.5-100	E	D	F	A	T	Y	Y	C	Q	Q	S	E	P	E	P							Y	T	F	G	Q	G	T	K	V	E	I	K	R
DL11	E	D	F	A	T	Y	Y	C	Q	Q	S	E	P	E	P							Y	T	F	G	Q	G	T	K	V	E	I	K	R
DL11b	E	D	F	A	T	Y	Y	C	Q	Q	S	E	P	E	P							Y	T	F	G	Q	G	T	K	V	E	I	K	R
DL11f	E	D	F	A	T	Y	Y	C	Q	Q	S	E	P	E	P							Y	T	F	G	Q	G	T	K	V	E	I	K	R

FIG. 33A

Kabat#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	A	B	36	37	38	39	40	41
D1	E	V	Q	L	V	E	S	G	G	G	L	V	Q	P	G	G	S	L	R	L	S	C	A	A	S	G	F	T	F	T	G	N	W	I	H			W	V	R	Q	A	P
D1.5	E	V	Q	L	V	E	S	G	G	G	L	V	Q	P	G	G	S	L	R	L	S	C	A	A	S	G	F	T	F	T	G	N	W	I	H			W	V	R	Q	A	P
D1.5-100	E	V	Q	L	V	E	S	G	G	G	L	V	Q	P	G	G	S	L	R	L	S	C	A	A	S	G	F	T	F	T	G	N	W	I	H			W	V	R	Q	A	P
DL11	E	V	Q	L	V	E	S	G	G	G	L	V	Q	P	G	G	S	L	R	L	S	C	A	A	S	G	F	T	L	S	G	D	W	I	H			W	V	R	Q	A	P
DL11b	E	V	Q	L	V	E	S	G	G	G	L	V	Q	P	G	G	S	L	R	L	S	C	A	A	S	G	F	T	L	S	G	D	W	I	H			W	V	R	Q	A	P
DL11f	E	V	Q	L	V	E	S	G	G	G	L	V	Q	P	G	G	S	L	R	L	S	C	A	A	S	G	F	T	L	S	G	D	W	I	H			W	V	R	Q	A	P

Kabat#	42	43	44	45	46	47	48	49	50	51	52	a	b	c	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
D1	G	K	G	L	E	W	V	G	E	I	S	P			S	G	G	Y	T	D	Y	A	D	S	V	K	G	R	F	T	I	S	A	D	T	S	K	N	T	A	Y	L
D1.5	G	K	G	L	E	W	V	G	E	I	S	P			S	G	G	Y	T	D	Y	A	D	S	V	K	G	R	F	T	I	S	A	D	T	S	K	N	T	A	Y	L
D1.5-100	G	K	G	L	E	W	V	G	E	I	S	P			S	G	G	Y	T	D	Y	A	D	S	V	K	G	R	F	T	I	S	A	D	T	S	K	N	T	A	Y	L
DL11	G	K	G	L	E	W	L	G	E	I	S	A			A	G	G	Y	T	D	Y	A	D	S	V	K	G	R	F	T	I	S	A	D	T	S	K	N	T	A	Y	L
DL11b	G	K	G	L	E	W	L	G	E	I	S	A			A	G	G	Y	T	D	Y	A	D	S	V	K	G	R	F	T	I	S	A	D	T	S	K	N	T	A	Y	L
DL11f	G	K	G	L	E	W	V	G	E	I	S	A			A	G	G	Y	T	D	Y	A	D	S	V	K	G	R	F	T	I	S	A	D	T	S	K	N	T	A	Y	L

Kabat#	81	82	A	B	C	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	A	B	C	D	E	F	G	H	I	J	K	101	102	103	104	105	106	107	108	109
D1	Q	M	N	S	L	R	A	E	D	T	A	V	Y	Y	C	A	R	E	S	R	V	S	Y	E	A	A	.						M	D	Y	W	G	Q	G	T	L	V
D1.5	Q	M	N	S	L	R	A	E	D	T	A	V	Y	Y	C	A	R	E	S	R	V	S	Y	E	A	A							M	D	Y	W	G	Q	G	T	L	V
D1.5-100	Q	M	N	S	L	R	A	E	D	T	A	V	Y	Y	C	A	R	E	S	R	V	S	Y	E	A	A							M	D	Y	W	G	Q	G	T	L	V
DL11	Q	M	N	S	L	R	A	E	D	T	A	V	Y	Y	C	A	R	E	S	R	V	S	F	E	A	A							M	D	Y	W	G	Q	G	T	L	V
DL11b	Q	M	N	S	L	R	A	E	D	T	A	V	Y	Y	C	A	R	E	S	R	V	S	F	E	A	A							M	D	Y	W	G	Q	G	T	L	V
DL11f	Q	M	N	S	L	R	A	E	D	T	A	V	Y	Y	C	A	R	E	S	R	V	S	F	E	A	A							M	D	Y	W	G	Q	G	T	L	V

FIG. 33B