FIG. 1A

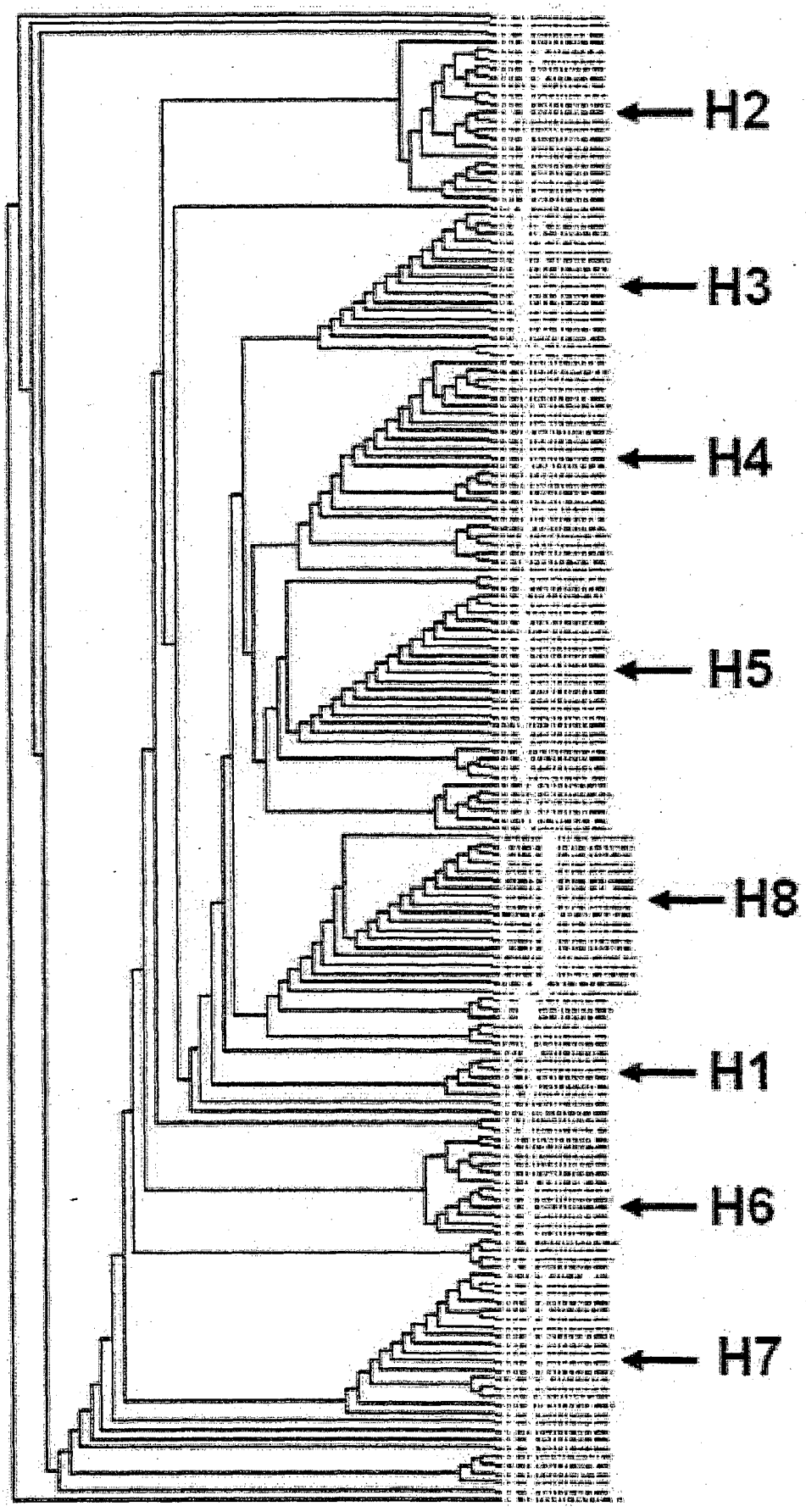


FIG. 1B

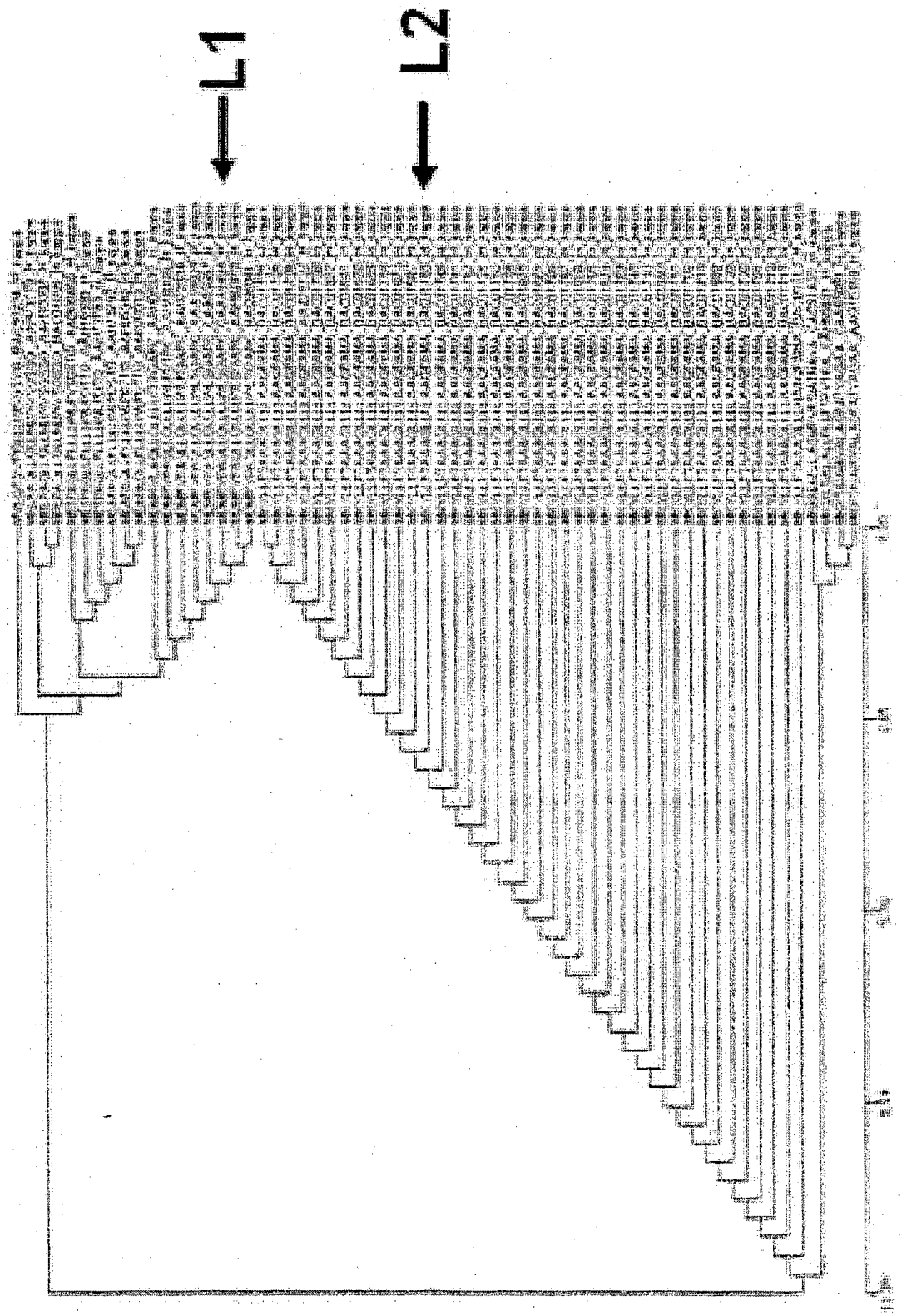


FIG. 1C

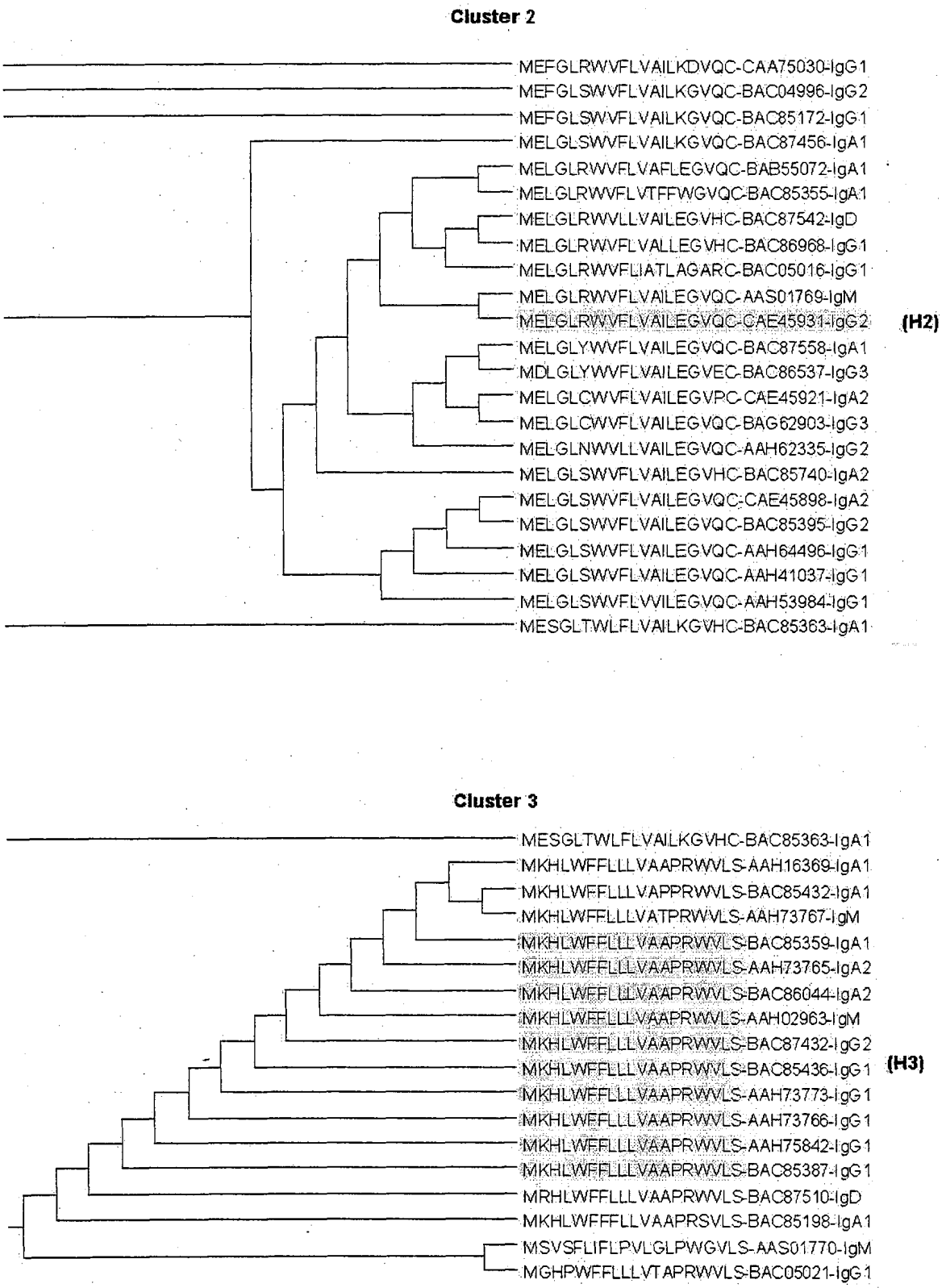

Cluster 2
MEFGLRWVFLVAILKDVQC-CAA75030-IgG1
MEFGLSWVFLVAILKGVQC-BAC04996-IgG2
MEFGLSWVFLVAILKGVQC-BAC85172-IgG1
MELGLSWVFLVAILKGVQC-BAC87456-IgA1
MELGLRWVFLVAFLEGVQC-BAB55072-IgA1
MELGLRWVFLVTFFWGVQC-BAC85355-IgA1
MELGLRWVLLVAILEGVHC-BAC87542-IgD
MELGLRWVFLVALLEGVHC-BAC86968-IgG1
MELGLRWVFLIATLAGARC-BAC05016-IgG1
MELGLRWVFLVAILEGVQC-AAS01769-IgM
MELGLRWVFLVAILEGVQC-CAE45931-IgG2
(H2)
MELGLYWVFLVAILEGVQC-BAC87558-IgA1
MDLGLYWVFLVAILEGVEC-BAC86537-IgG3
MELGLCWVFLVAILEGVPC-CAE45921-IgA2
MELGLCWVFLVAILEGVQC-BAG62903-IgG3
MELGLNWVLLVAILEGVQC-AAH62335-IgG2
MELGLSWVFLVAILEGVHC-BAC85740-IgA2
MELGLSWVFLVAILEGVQC-CAE45898-IgA2
MELGLSWVFLVAILEGVQC-BAC85395-IgG2
MELGLSWVFLVAILEGVQC-AAH64496-IgG1
MELGLSWVFLVAILEGVQC-AAH41037-IgG1
MELGLSWVFLVVILEGVQC-AAH53984-IgG1
MESGLTWLFLVAILKGVHC-BAC85363-IgA1
Cluster 3
MESGLTWLFLVAILKGVHC-BAC85363-IgA1
MKHLWFFLLLVAAPRWVLS-AAH16369-IgA1
MKHLWFFLLLVAPPRWVLS-BAC85432-IgA1
MKHLWFFLLLVATPRWVLS-AAH73767-IgM
MKHLWFFLLLVAAPRWVLS-BAC85359-IgA1
MKHLWFFLLLVAAPRWVLS-AAH73765-IgA2
MKHLWFFLLLVAAPRWVLS-BAC86044-IgA2
MKHLWFFLLLVAAPRWVLS-AAH02963-IgM
MKHLWFFLLLVAAPRWVLS-BAC87432-IgG2
MKHLWFFLLLVAAPRWVLS-BAC85436-IgG1
(H3)
MKHLWFFLLLVAAPRWVLS-AAH73773-IgG1
MKHLWFFLLLVAAPRWVLS-AAH73766-IgG1
MKHLWFFLLLVAAPRWVLS-AAH75842-IgG1
MKHLWFFLLLVAAPRWVLS-BAC85387-IgG1
MRHLWFFLLLVAAPRWVLS-BAC87510-IgD
MKHLWFFFLLVAAPRSVLS-BAC85198-IgA1
MSVSFLIFLPVLGLPWGVLS-AAS01770-IgM
MGHPWFFLLLVTAPRWVLS-BAC05021-IgG1

FIG. 1D

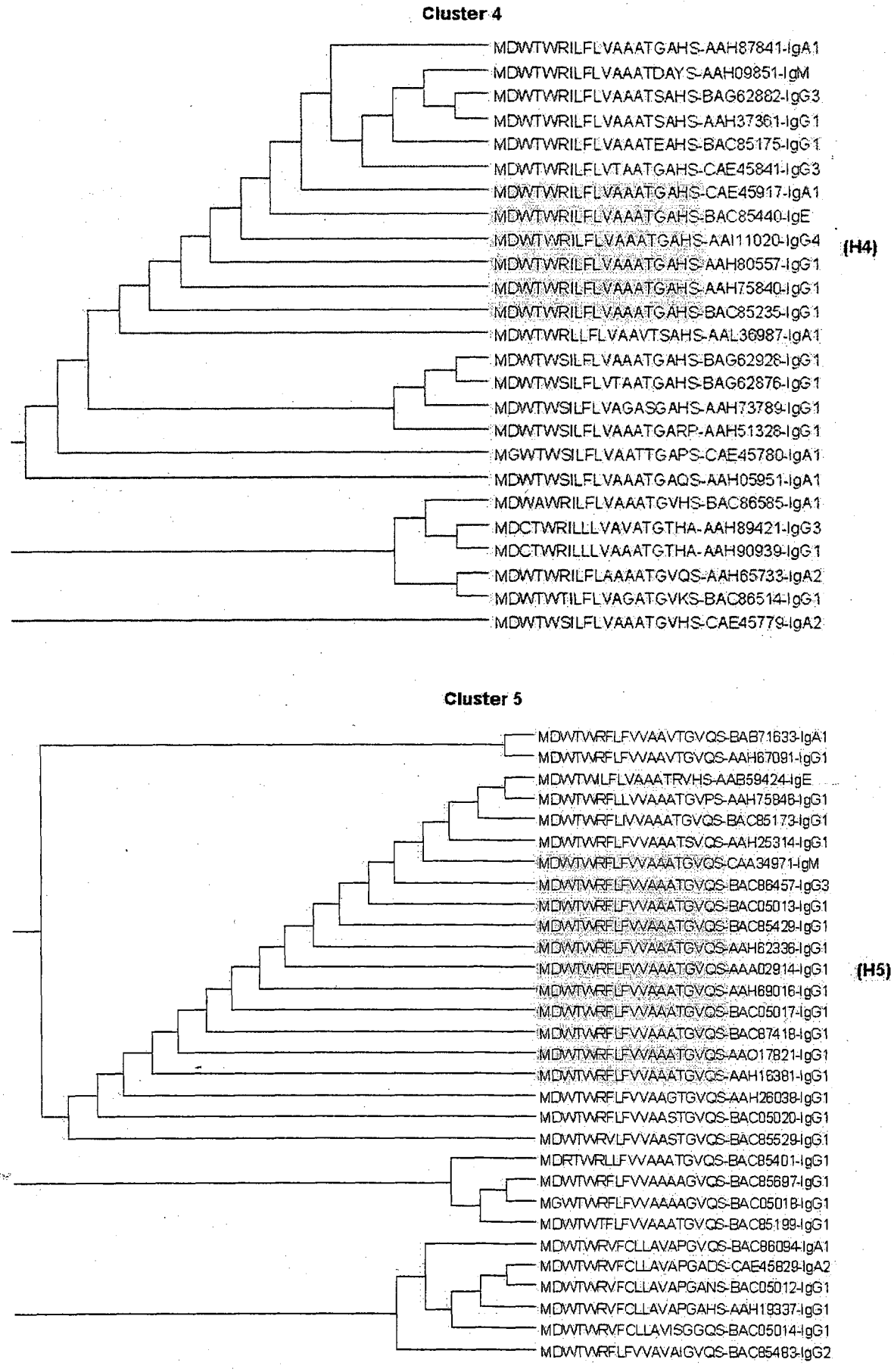

Cluster 4
MDWTWRILFLVAAATGAHS-AAH87841-IgA1
MDWTWRILFLVAAATDAYS-AAH09851-IgM
MDWTWRILFLVAAATSAHS-BAG62882-IgG3
MDWTWRILFLVAAATSAHS-AAH37361-IgG1
MDWTWRILFLVAAATEAHS-BAC85175-IgG1
MDWTWRILFLVTAATGAHS-CAE45841-IgG3
MDWTWRILFLVAAATGAHS-CAE45917-IgA1
MDWTWRILFLVAAATGAHS-BAC85440-IgE
MDWTWRILFLVAAATGAHS-AAI11020-IgG4
(H4)
MDWTWRILFLVAAATGAHS-AAH80557-IgG1
MDWTWRILFLVAAATGAHS-AAH75840-IgG1
MDWTWRILFLVAAATGAHS-BAC85235-IgG1
MDWTWRLLFLVAAVTSAHS-AAL36987-IgA1
MDWTWSILFLVAAATGAHS-BAG62928-IgG1
MDWTWSILFLVTAATGAHS-BAG62876-IgG1
MDWTWSILFLVAGASGAHS-AAH73789-IgG1
MDWTWSILFLVAAATGARP-AAH51328-IgG1
MGWTWSILFLVAATTGAPS-CAE45780-IgA1
MDWTWSILFLVAAATGAQS-AAH05951-IgA1
MDWAWRILFLVAAATGVHS-BAC86585-IgA1
MDCTWRILLLVAVATGTHA-AAH89421-IgG3
MDCTWRILLLVAAATGTHA-AAH90939-IgG1
MDWTWRILFLAAAATGVQS-AAH65733-IgA2
MDWTWTILFLVAGATGVKS-BAC86514-IgG1
MDWTWSILFLVAAATGVHS-CAE45779-IgA2
Cluster 5
MDWTWRFLFVVAAVTGVQS-BAB71633-IgA1
MDWTWRFLFVVAAVTGVQS-AAH67091-IgG1
MDWTWILFLVAAATRVHS-AAB59424-IgE
MDWTWRFLLVVAAATGVPS-AAH75846-IgG1
MDWTWRFLIVVAAATGVQS-BAC85173-IgG1
MDWTWRFLFVVAAATSVQS-AAH25314-IgG1
MDWTWRFLFVVAAATGVQS-CAA34971-IgM
MDWTWRFLFVVAAATGVQS-BAC86457-IgG3
MDWTWRFLFVVAAATGVQS-BAC05013-IgG1
MDWTWRFLFVVAAATGVQS-BAC85429-IgG1
MDWTWRFLFVVAAATGVQS-AAH62336-IgG1
MDWTWRFLFVVAAATGVQS-AAA02914-IgG1
(H5)
MDWTWRFLFVVAAATGVQS-AAH69016-IgG1
MDWTWRFLFVVAAATGVQS-BAC05017-IgG1
MDWTWRFLFVVAAATGVQS-BAC87418-IgG1
MDWTWRFLFVVAAATGVQS-AAO17821-IgG1
MDWTWRFLFVVAAATGVQS-AAH16381-IgG1
MDWTWRFLFVVAAGTGVQS-AAH26038-IgG1
MDWTWRFLFVVAASTGVQS-BAC05020-IgG1
MDWTWRVLFVVAASTGVQS-BAC85529-IgG1
MDRTWRLLFVVAAATGVQS-BAC85401-IgG1
MDWTWRFLFVVAAAAGVQS-BAC85697-IgG1
MGWTWRFLFVVAAAAGVQS-BAC05018-IgG1
MDWTWTFLFVVAAATGVQS-BAC85199-IgG1
MDWTWRVFCLLAVAPGVQS-BAC86094-IgA1
MDWTWRVFCLLAVAPGADS-CAE45829-IgA2
MDWTWRVFCLLAVAPGANS-BAC05012-IgG1
MDWTWRVFCLLAVAPGAHS-AAH19337-IgG1
MDWTWRVFCLLAVISGGQS-BAC05014-IgG1
MDWTWRFLFVVAVAIGVQS-BAC85483-IgG2

FIG. 1E

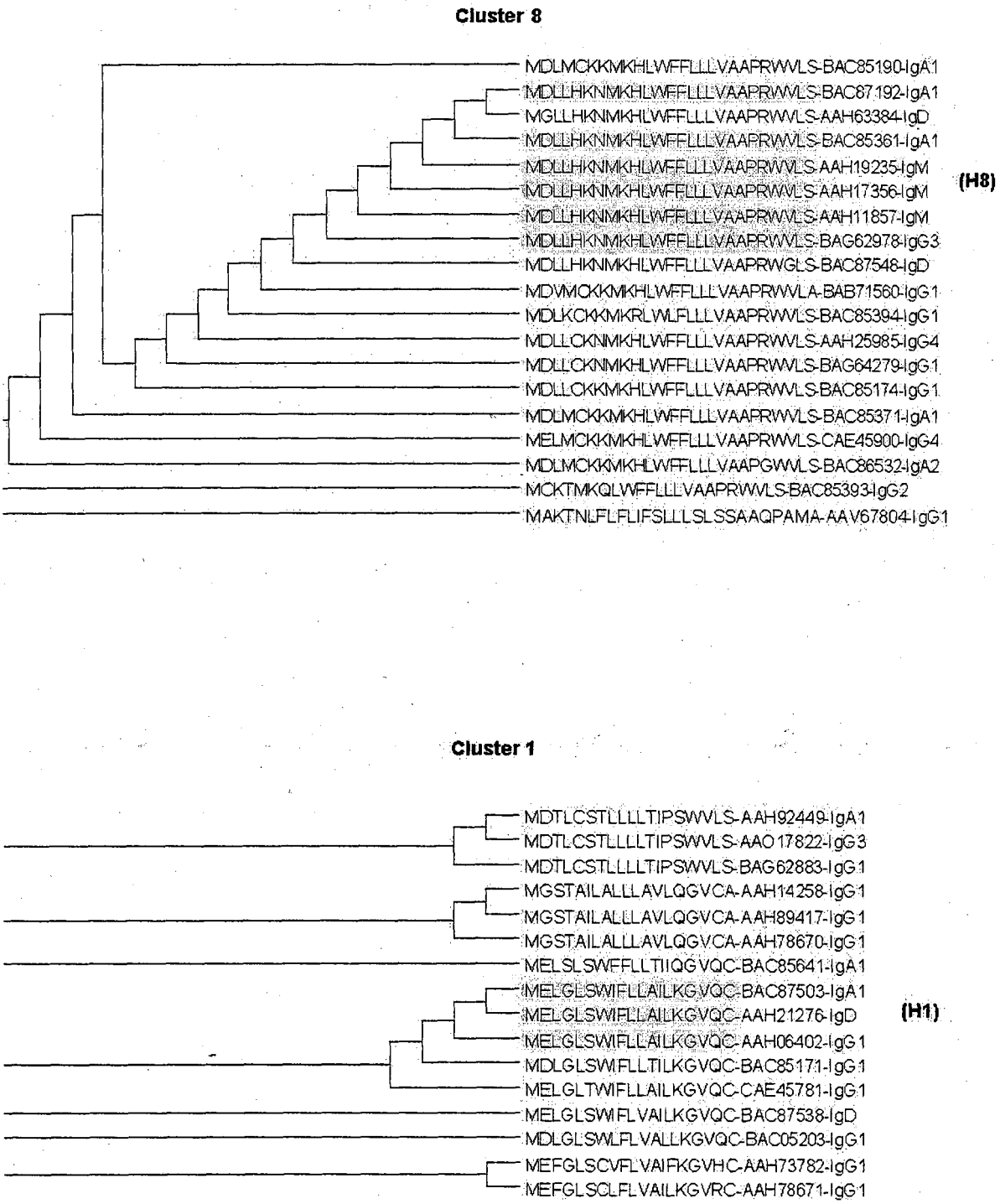

Cluster 8
MDLMCKKMKHLWFFLLLVAAPRWVLS-BAC85190-IgA1
MDLLHKNMKHLWFFLLLVAAPRWVLS-BAC87192-IgA1
MGLLHKNMKHLWFFLLLVAAPRWVLS-AAH63384-IgD
MDLLHKNMKHLWFFLLLVAAPRWVLS-BAC85361-IgA1
MDLLHKNMKHLWFFLLLVAAPRWVLS-AAH19235-IgM
MDLLHKNMKHLWFFLLLVAAPRWVLS-AAH17356-IgM
MDLLHKNMKHLWFFLLLVAAPRWVLS-AAH11857-IgM
MDLLHKNMKHLWFFLLLVAAPRWVLS-BAG62978-IgG3
MDLLHKNMKHLWFFLLLVAAPRWGLS-BAC87548-IgD
MDVMCKKMKHLWFFLLLVAAPRWVLA-BAB71560-IgG1
MDLKCKKMKRLWLFLLLVAAPRWVLS-BAC85394-IgG1
MDLLCKNMKHLWFFLLLVAAPRWVLS-AAH25985-IgG4
MDLLCKNMKHLWFFLLLVAAPRWVLS-BAG64279-IgG1
MDLLCKKMKHLWFFLLLVAAPRWVLS-BAC85174-IgG1
MDLMCKKMKHLWFFLLLVAAPRWVLS-BAC85371-IgA1
MELMCKKMKHLWFFLLLVAAPRWVLS-CAE45900-IgG4
MDLMCKKMKHLWFFLLLVAAPGWVLS-BAC86532-IgA2
MCKTMKQLWFFLLLVAAPRWVLS-BAC85393-IgG2
MAKTNLFLFLIFSLLLSLSSAAQPAMA-AAV67804-IgG1
(H8)
Cluster 1
MDTLCSTLLLLTIPSWVLS-AAH92449-IgA1
MDTLCSTLLLLTIPSWVLS-AAO17822-IgG3
MDTLCSTLLLLTIPSWVLS-BAG62883-IgG1
MGSTAILALLLAVLQGVCA-AAH14258-IgG1
MGSTAILALLLAVLQGVCA-AAH89417-IgG1
MGSTAILALLLAVLQGVCA-AAH78670-IgG1
MELSLSWFFLLTIIQGVQC-BAC85641-IgA1
MELGLSWIFLLAILKGVQC-BAC87503-IgA1
MELGLSWIFLLAILKGVQC-AAH21276-IgD
MELGLSWIFLLAILKGVQC-AAH06402-IgG1
MDLGLSWIFLLTILKGVQC-BAC85171-IgG1
MELGLTWIFLLAILKGVQC-CAE45781-IgG1
MELGLSWIFLVAILKGVQC-BAC87538-IgD
MDLGLSWLFLVALLKGVQC-BAC05203-IgG1
MEFGLSCVFLVAIFKGVHC-AAH73782-IgG1
MEFGLSCLFLVAILKGVRC-AAH78671-IgG1
(H1)

FIG. 1F

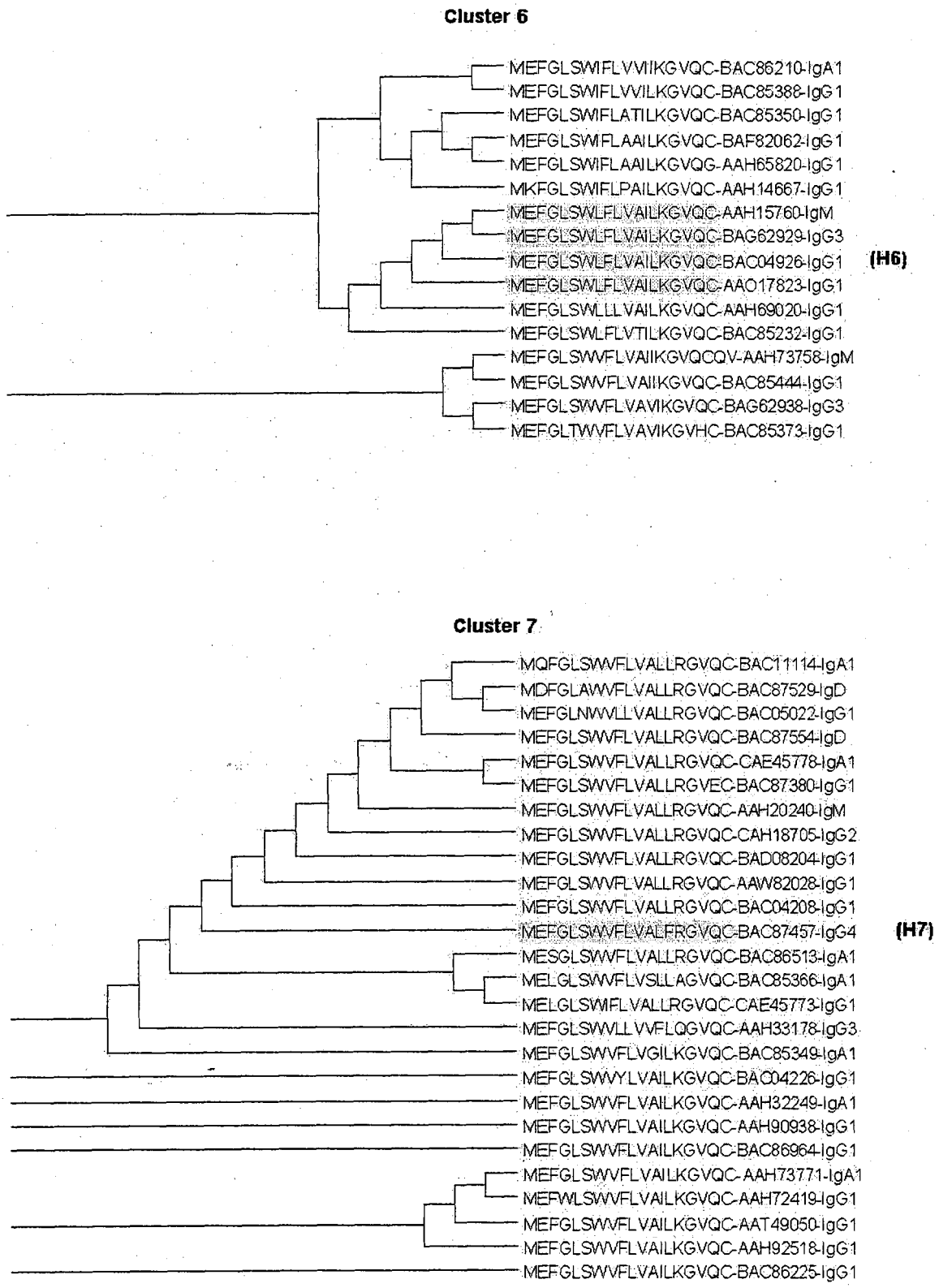

Cluster 6
MEFGLSWIFLVVIIKGVQC-BAC86210-IgA1
MEFGLSWIFLVVILKGVQC-BAC85388-IgG1
MEFGLSWIFLATILKGVQC-BAC85350-IgG1
MEFGLSWIFLAAILKGVQC-BAF82062-IgG1
MEFGLSWIFLAAILKGVQG-AAH65820-IgG1
MKFGLSWIFLPAILKGVQC-AAH14667-IgG1
MEFGLSWLFLVAILKGVQC-AAH15760-IgM
MEFGLSWLFLVAILKGVQC-BAG62929-IgG3
MEFGLSWLFLVAILKGVQC-BAC04926-IgG1
(H6)
MEFGLSWLFLVAILKGVQC-AAO17823-IgG1
MEFGLSWLLLVAILKGVQC-AAH69020-IgG1
MEFGLSWLFLVTILKGVQC-BAC85232-IgG1
MEFGLSWVFLVAIIKGVQCQV-AAH73758-IgM
MEFGLSWVFLVAIIKGVQC-BAC85444-IgG1
MEFGLSWVFLVAVIKGVQC-BAG62938-IgG3
MEFGLTWVFLVAVIKGVHC-BAC85373-IgG1
Cluster 7
MQFGLSWVFLVALLRGVQC-BAC11114-IgA1
MDFGLAWVFLVALLRGVQC-BAC87529-IgD
MEFGLNWVLLVALLRGVQC-BAC05022-IgG1
MEFGLSWVFLVALLRGVQC-BAC87554-IgD
MEFGLSWVFLVALLRGVQC-CAE45778-IgA1
MEFGLSWVFLVALLRGVEC-BAC87380-IgG1
MEFGLSWVFLVALLRGVQC-AAH20240-IgM
MEFGLSWVFLVALLRGVQC-CAH18705-IgG2
MEFGLSWVFLVALLRGVQC-BAD08204-IgG1
MEFGLSWVFLVALLRGVQC-AAW82028-IgG1
MEFGLSWVFLVALLRGVQC-BAC04208-IgG1
MEFGLSWVFLVALFRGVQC-BAC87457-IgG4
(H7)
MESGLSWVFLVALLRGVQC-BAC86513-IgA1
MELGLSWVFLVSLLAGVQC-BAC85366-IgA1
MELGLSWIFLVALLRGVQC-CAE45773-IgG1
MEFGLSWVLLVVFLQGVQC-AAH33178-IgG3
MEFGLSWVFLVGILKGVQC-BAC85349-IgA1
MEFGLSWVYLVAILKGVQC-BAC04226-IgG1
MEFGLSWVFLVAILKGVQC-AAH32249-IgA1
MEFGLSWVFLVAILKGVQC-AAH90938-IgG1
MEFGLSWVFLVAILKGVQC-BAC86964-IgG1
MEFGLSWVFLVAILKGVQC-AAH73771-IgA1
MEFWLSWVFLVAILKGVQC-AAH72419-IgG1
MEFGLSWVFLVAILKGVQC-AAT49050-IgG1
MEFGLSWVFLVAILKGVQC-AAH92518-IgG1
MEFGLSWVFLVAILKGVQC-BAC86225-IgG1

FIG. 1G

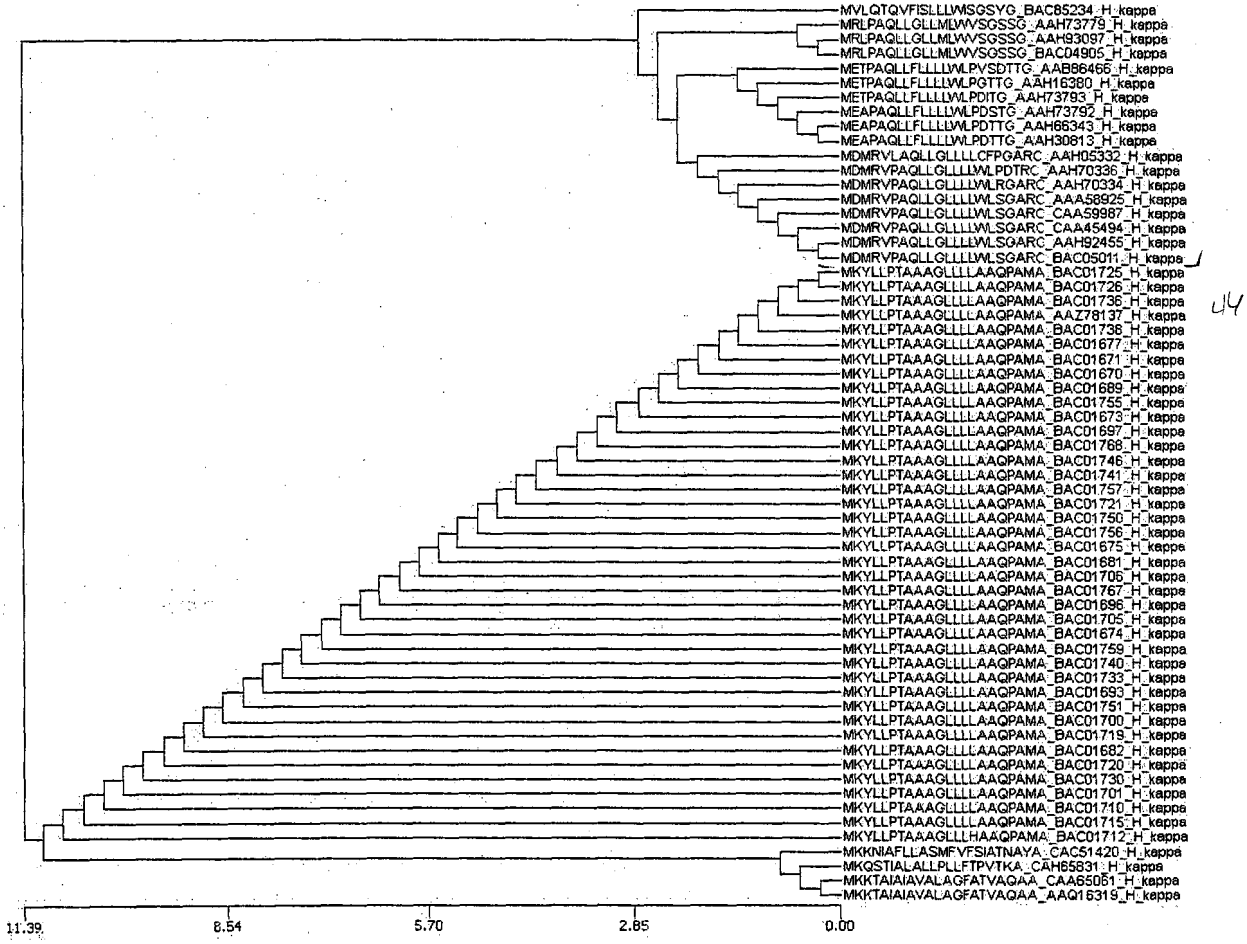

MVLQTQVFISLLLWISGSYG_BAC85234_H_kappa
MRLPAQLLGLLMLWVSGSSG_AAH73779_H_kappa
MRLPAQLLGLLMLWVSGSSG_AAH93097_H_kappa
MRLPAQLLGLLMLWVSGSSG_BAC04905_H_kappa
METPAQLLFLLLLWLPVSDTTG_AAB86466_H_kappa
METPAQLLFLLLLWLPGTTG_AAH16380_H_kappa
METPAQLLFLLLLWLPDTTG_AAH73793_H_kappa
MEAPAQLLFLLLLWLPDSTG_AAH73792_H_kappa
MEAPAQLLFLLLLWLPDTTG_AAH66343_H_kappa
MEAPAQLLFLLLLWLPDTTG_AAH30813_H_kappa
MDMRVLAQLLGLLLLCFPGARC_AAH05332_H_kappa
MDMRVPAQLLGLLLLWLPDTRC_AAH70336_H_kappa
MDMRVPAQLLGLLLLWLRGARC_AAH70334_H_kappa
MDMRVPAQLLGLLLLWLSGARC_AAA58925_H_kappa
MDMRVPAQLLGLLLLWLSGARC_CAA59987_H_kappa
MDMRVPAQLLGLLLLWLSGARC_CAA45494_H_kappa
MDMRVPAQLLGLLLLWLSGARC_AAH92455_H_kappa
MDMRVPAQLLGLLLLWLSGARC_BAC05011_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01725_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01726_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01736_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_AAZ78137_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01738_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01677_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01671_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01670_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01689_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01755_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01673_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01697_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01768_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01746_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01741_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01757_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01721_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01750_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01756_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01675_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01681_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01706_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01767_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01696_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01705_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01674_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01759_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01740_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01733_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01693_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01751_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01700_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01719_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01682_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01720_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01730_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01701_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01710_H_kappa
MKYLLPTAAAGLLLLAAQPAMA_BAC01715_H_kappa
MKYLLPTAAAGLLLHAAQPAMA_BAC01712_H_kappa
MKKNIAFLLASMFVFSIATNAYA_CAC51420_H_kappa
MKQSTIALALLPLLFTPVTKA_CAH65831_H_kappa
MKKTAIAIAVALAGFATVAQAA_CAA65061_H_kappa
MKKTAIAIAVALAGFATVAQAA_AAQ16319_H_kappa
11.39
8.54
5.70
2.85
0.00

FIG. 2

Heavy chain	SEQ ID NO:	Amino acid sequence	SEQ ID NO:	Corresponding nucleotide sequence
H1	5	MELGLSWIFLLAILKGVQC	284	ATGGAGTTGGGACTGAGCTGGATTTTCCTTTTGGCTATTTTAA AAGGTGTCCAGTGT
H2	6	MELGLRWVFLVAILEGVQC	285	ATGGAACTGGGGCTCCGCTGGGTTTTCCTTGTTGCTATTTTAG AAGGTGTCCAGTGT
H3	7	MKHLWFFLLLVAAPRWVLS	286	ATGAAACACCTGTGGTTCTTCCTCCTGCTGGTGGCAGCTCCCA GATGGGTCCTGTCC
H4	8	MDWTWRILFLVAAATGAHS	287	ATGGACTGGACCTGGAGGATCCTCTTCTTGGTGGCAGCAGCA ACAGGTGCCCACTCG
H5	1	MDWTWRFLFVVAAATGVQS	288	ATGGACTGGACCTGGAGGTTCCTCTTTGTGGTGGCAGCAGCT ACAGGTGTCCAGTCC
H6	9	MEFGLSWLFLVAILKGVQC	289	ATGGAGTTTGGGCTGAGCTGGCTTTTTCTTGTGGCGATTCTAA AAGGTGTCCAGTGT
H7	3	MEFGLSWVFLVALFRGVQC	290	ATGGAGTTTGGGCTGAGCTGGGTTTTCCTCGTTGCTCTTTTTA GAGGTGTCCAGTGT
H8	10	MDLLHKNMKHLWFFLLLVAAPRWVLS	292	ATGGACCTCCTGCACAAGAACATGAAACACCTGTGGTTCTTC CTCCTCCTGGTGGCAGCTCCCAGATGGGTGCTGTCC
Light chain	**SEQ ID NO:**	**Amino acid sequence**	**SEQ ID NO:**	**Corresponding nucleotide sequence**
L1	2	MDMRVPAQLLGLLLLWLSGARC	293	ATGGACATGAGGGTCCCTGCTCAGCTCCTGGGGCTCCTGCTG CTCTGGCTCTCAGGTGCCAGATGT
L2	4	MKYLLPTAAAGLLLLAAQPAMA	294	ATGAAATACCTATTGCCTACGGCAGCCGCTGGATTGTTATTAC TCGCGGCCCAGCCGGCCATGGCC

FIG. 3

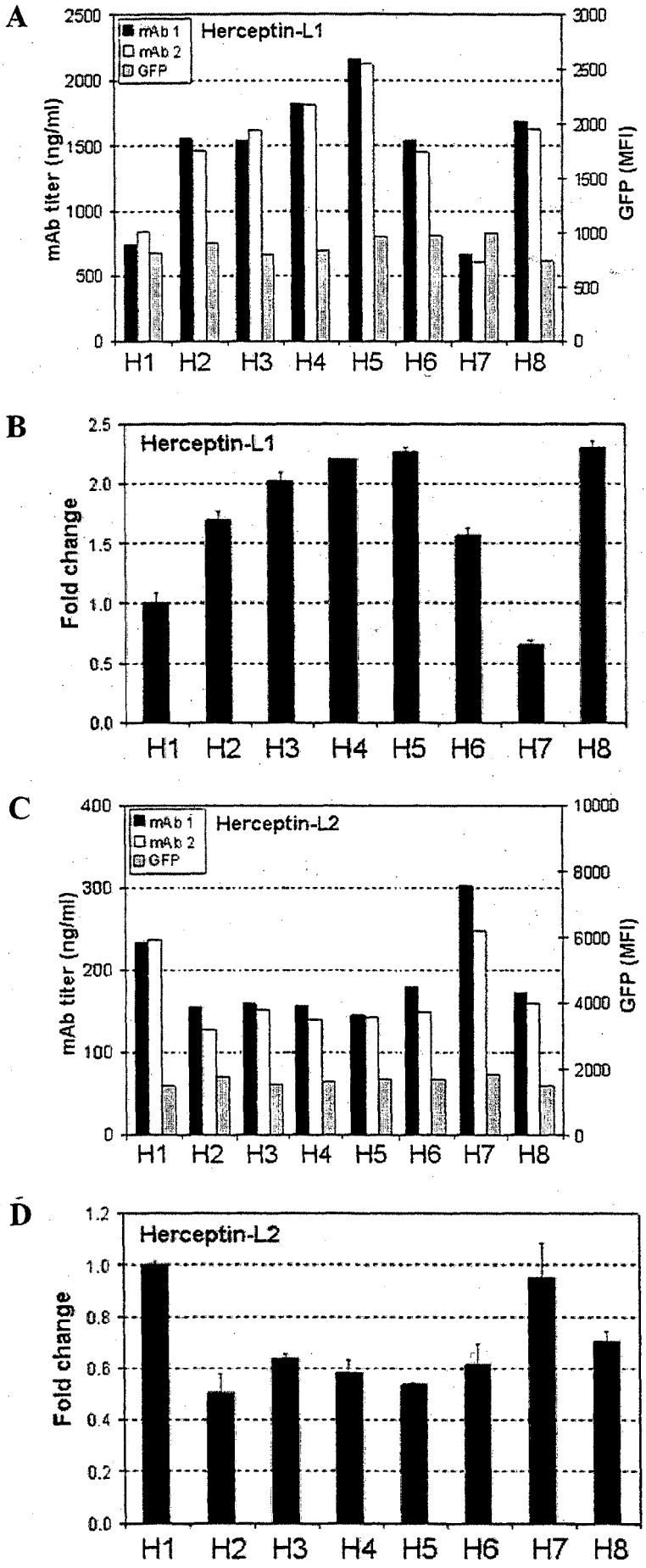

A
mAb 1
mAb 2
GFP
Herceptin-L1
mAb titer (ng/ml)
GFP (MFI)
2500
2000
1500
1000
500
0
3000
2500
2000
1500
1000
500
0
H1 H2 H3 H4 H5 H6 H7 H8
B
Herceptin-L1
Fold change
2.5
2.0
1.5
1.0
0.5
0.0
H1 H2 H3 H4 H5 H6 H7 H8
C
mAb 1
mAb 2
GFP
Herceptin-L2
mAb titer (ng/ml)
GFP (MFI)
400
300
200
100
0
10000
8000
6000
4000
2000
0
H1 H2 H3 H4 H5 H6 H7 H8
D
Herceptin-L2
Fold change
1.2
1.0
0.8
0.6
0.4
0.2
0.0
H1 H2 H3 H4 H5 H6 H7 H8

FIG. 4

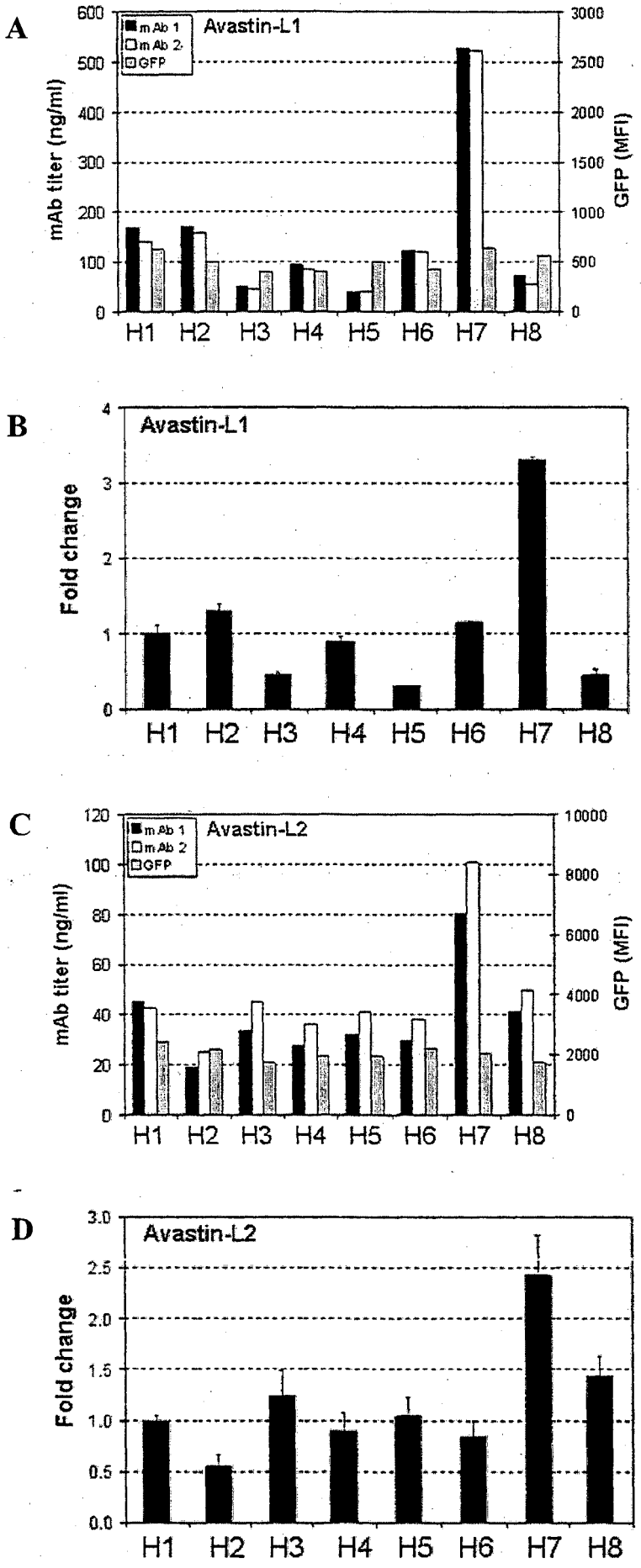

A
mAb 1
mAb 2
GFP
Avastin-L1
mAb titer (ng/ml)
GFP (MFI)
H1 H2 H3 H4 H5 H6 H7 H8
B
Avastin-L1
Fold change
H1 H2 H3 H4 H5 H6 H7 H8
C
mAb 1
mAb 2
GFP
Avastin-L2
mAb titer (ng/ml)
GFP (MFI)
H1 H2 H3 H4 H5 H6 H7 H8
D
Avastin-L2
Fold change
H1 H2 H3 H4 H5 H6 H7 H8

FIG. 5

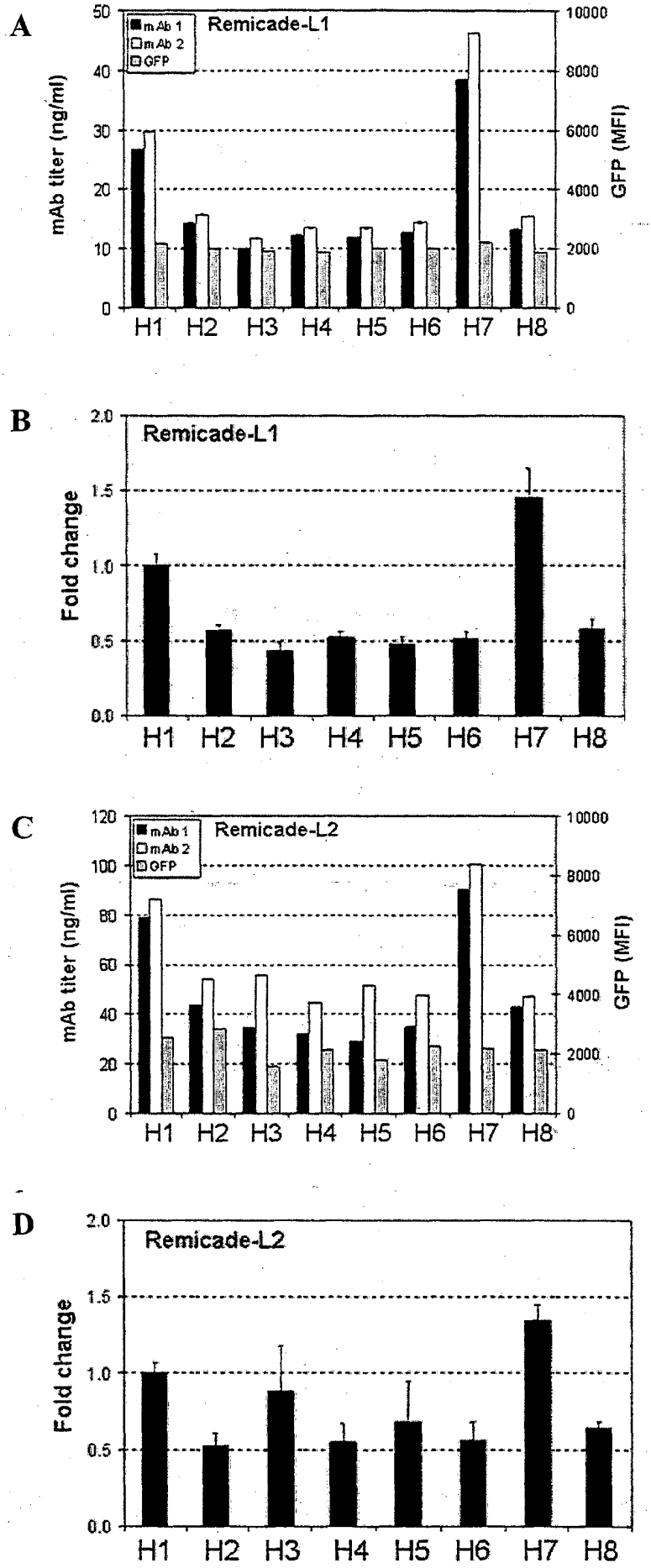

A
Remicade-L1
mAb 1
mAb 2
GFP
mAb titer (ng/ml)
GFP (MFI)
H1 H2 H3 H4 H5 H6 H7 H8
B
Remicade-L1
Fold change
C
Remicade-L2
D
Remicade-L2

FIG. 6

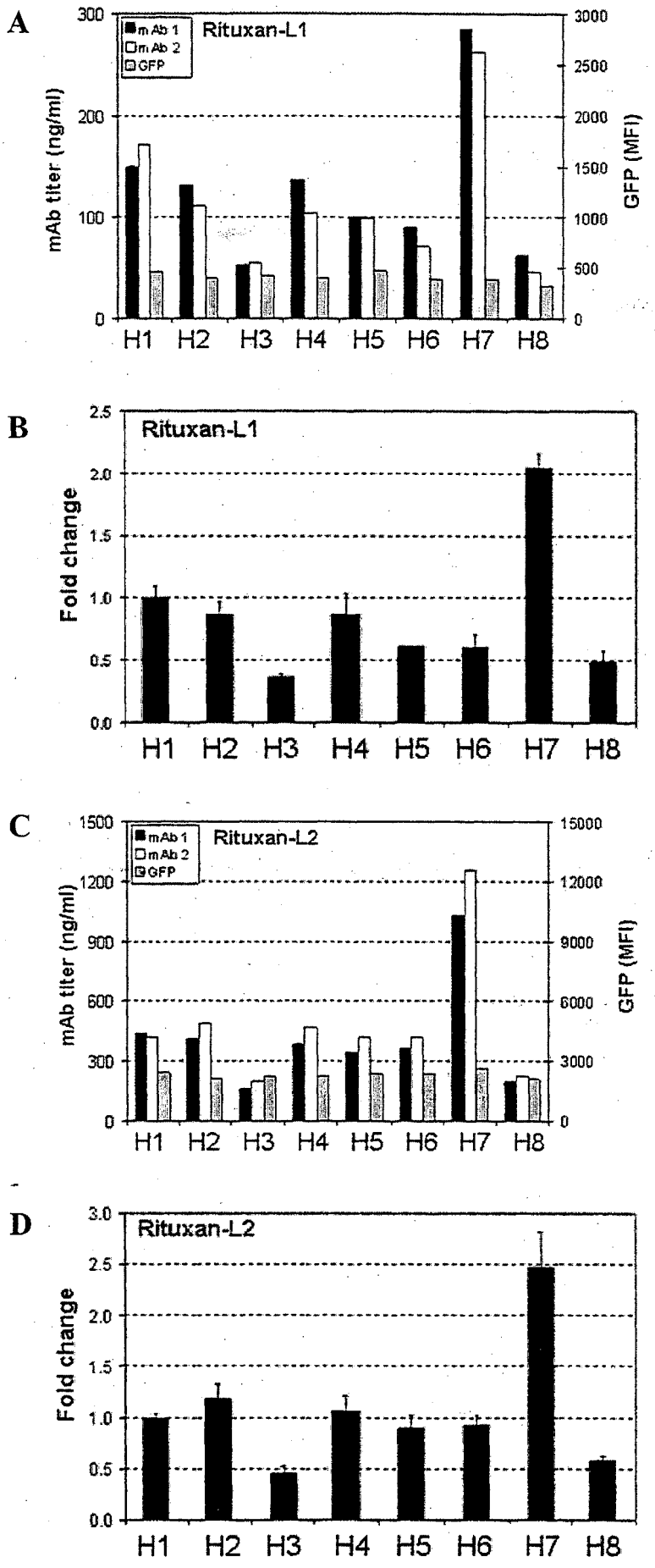

A
Rituxan-L1
mAb 1
mAb 2
GFP
mAb titer (ng/ml)
GFP (MFI)
300
200
100
0
3000
2500
2000
1500
1000
500
0
H1 H2 H3 H4 H5 H6 H7 H8
B
Rituxan-L1
Fold change
2.5
2.0
1.5
1.0
0.5
0.0
H1 H2 H3 H4 H5 H6 H7 H8
C
Rituxan-L2
mAb 1
mAb 2
GFP
mAb titer (ng/ml)
GFP (MFI)
1500
1200
900
600
300
0
15000
12000
9000
6000
3000
0
H1 H2 H3 H4 H5 H6 H7 H8
D
Rituxan-L2
Fold change
3.0
2.5
2.0
1.5
1.0
0.5
0.0
H1 H2 H3 H4 H5 H6 H7 H8

FIG. 7

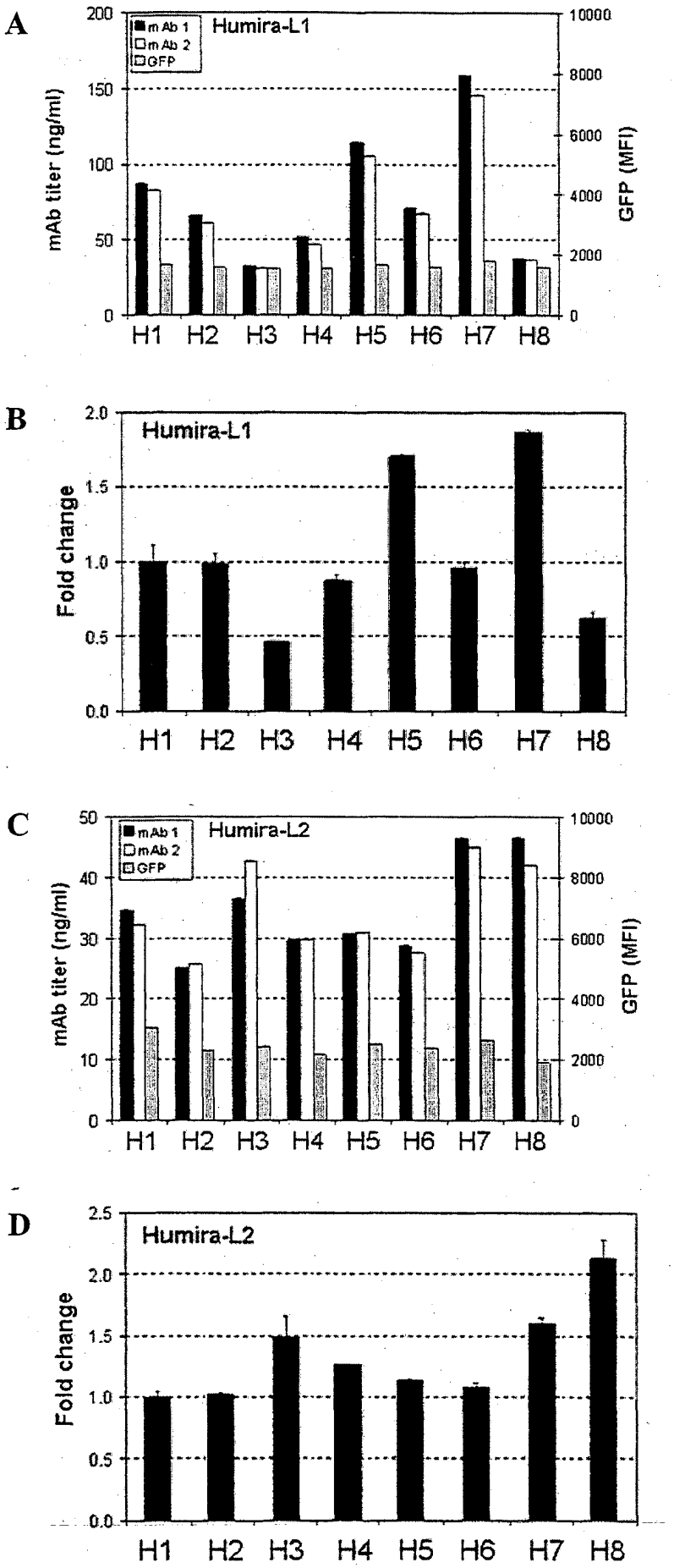
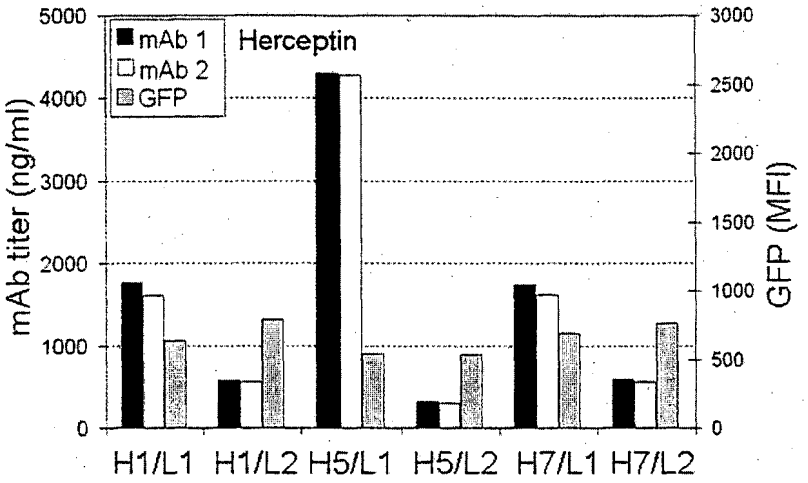
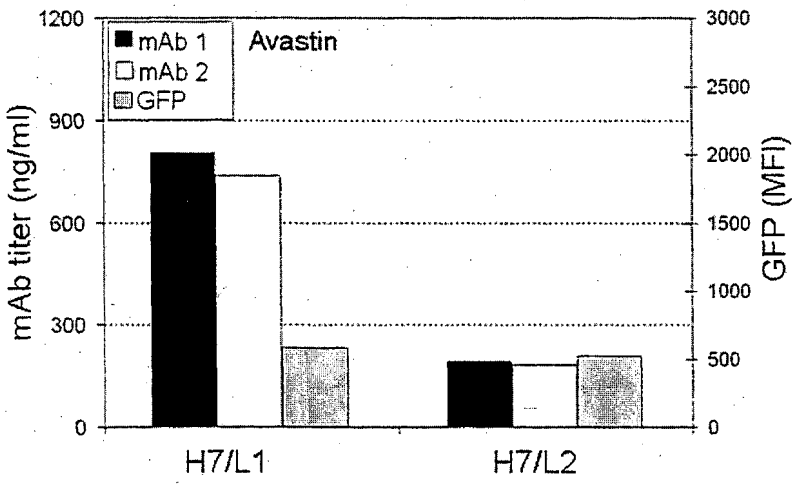

A
mAb 1
mAb 2
GFP
Humira-L1
mAb titer (ng/ml)
GFP (MFI)
200
150
100
50
0
10000
8000
6000
4000
2000
0
H1 H2 H3 H4 H5 H6 H7 H8
B
Humira-L1
Fold change
2.0
1.5
1.0
0.5
0.0
H1 H2 H3 H4 H5 H6 H7 H8
C
mAb 1
mAb 2
GFP
Humira-L2
mAb titer (ng/ml)
GFP (MFI)
50
40
30
20
10
0
10000
8000
6000
4000
2000
0
H1 H2 H3 H4 H5 H6 H7 H8
D
Humira-L2
Fold change
2.5
2.0
1.5
1.0
0.5
0.0
H1 H2 H3 H4 H5 H6 H7 H8

FIG. 8

A


mAb 1
mAb 2
GFP
Herceptin
mAb titer (ng/ml)
GFP (MFI)
5000
4000
3000
2000
1000
0
3000
2500
2000
1500
1000
500
0
H1/L1
H1/L2
H5/L1
H5/L2
H7/L1
H7/L2

B


mAb 1
mAb 2
GFP
Avastin
mAb titer (ng/ml)
GFP (MFI)
1200
900
600
300
0
3000
2500
2000
1500
1000
500
0
H7/L1
H7/L2

C

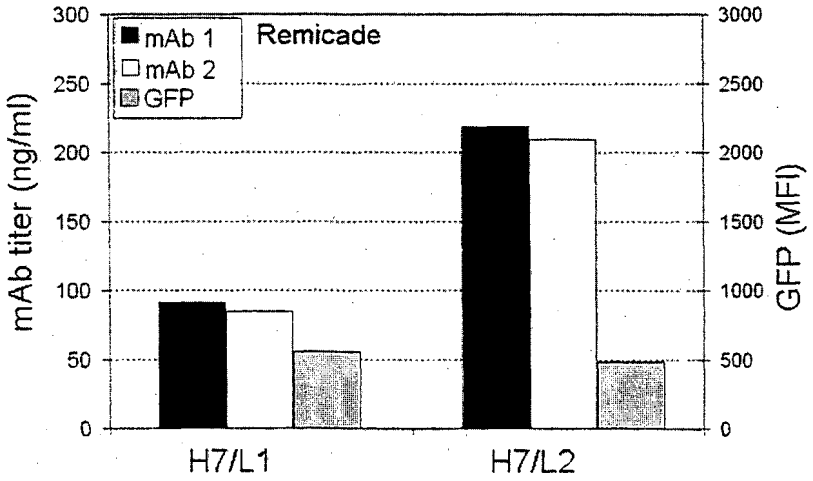
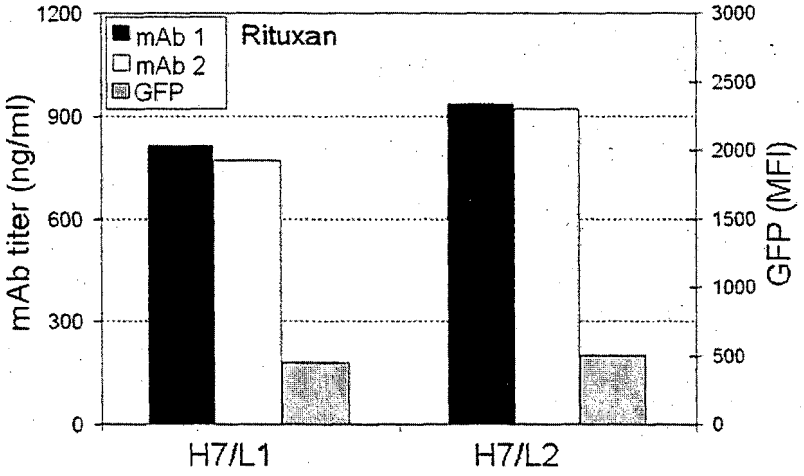

mAb 1
mAb 2
GFP
Remicade
mAb titer (ng/ml)
GFP (MFI)
300
250
200
150
100
50
0
3000
2500
2000
1500
1000
500
0
H7/L1
H7/L2

FIG. 8 (cont'd)

D



E

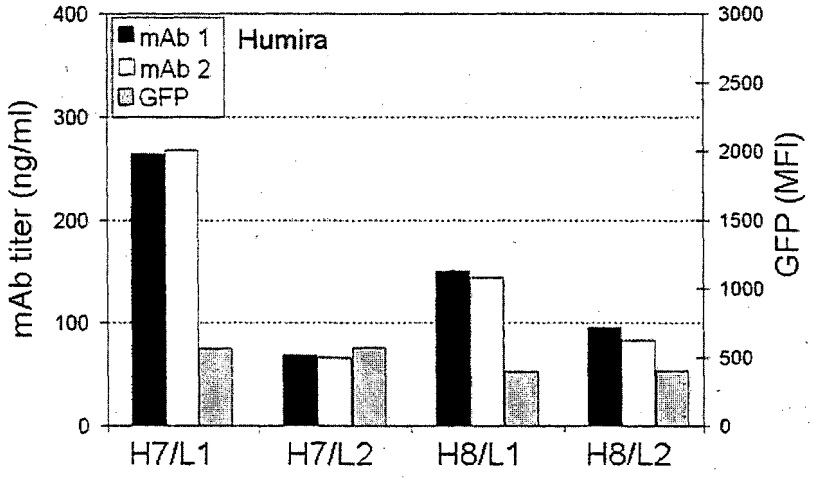


FIG. 9

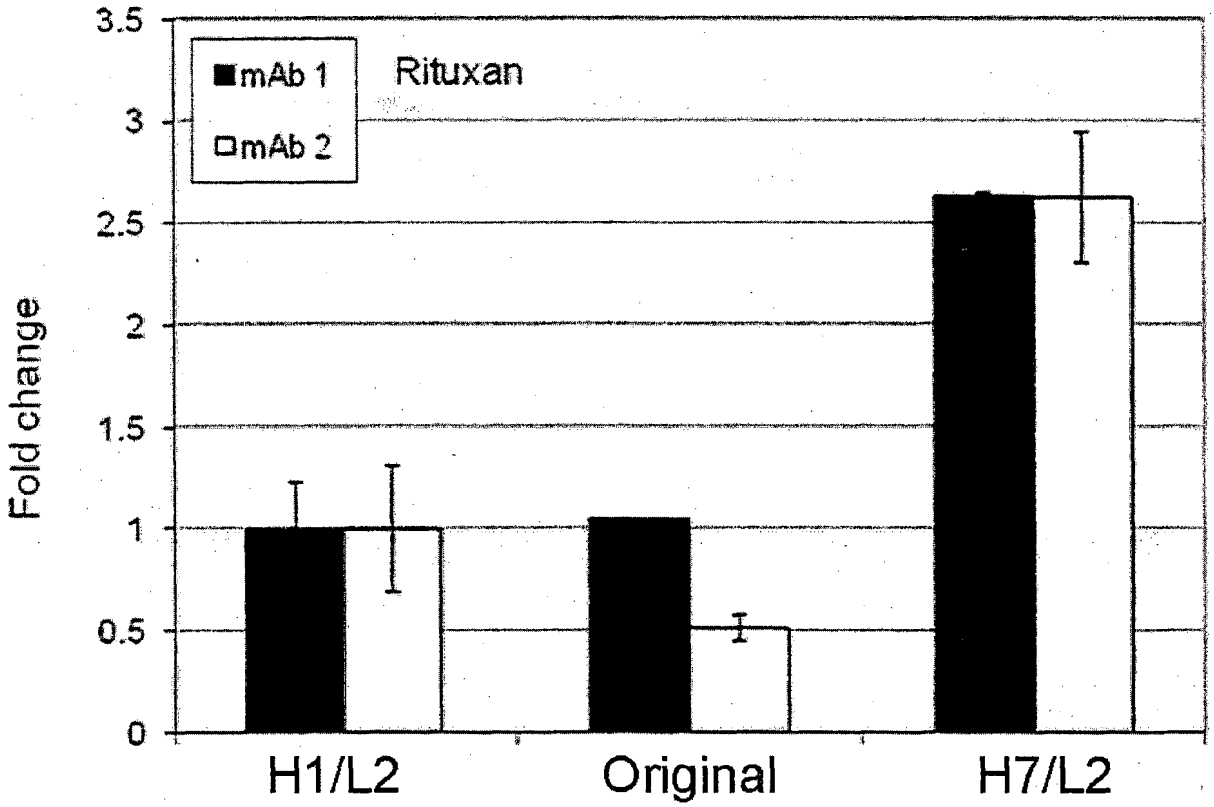
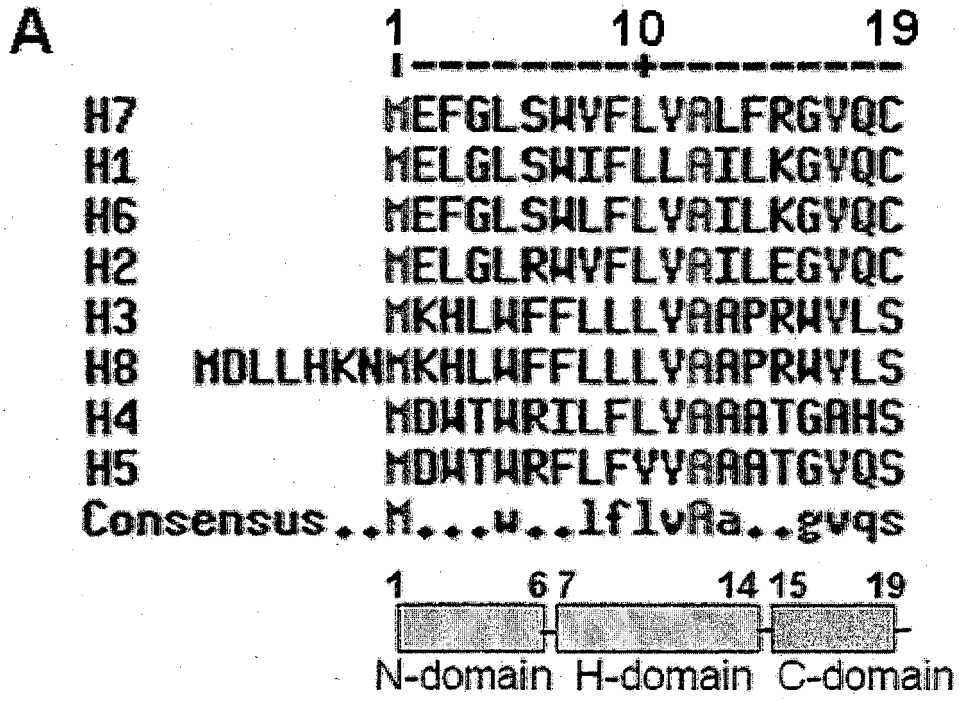

3.5
3
2.5
2
1.5
1
0.5
0
Fold change
mAb 1
mAb 2
Rituxan
H1/L2
Original
H7/L2

FIG. 10



B

H7: MEFGLSWVFLVALFRGVQC
H7a: MEFGWSWVFLVALFRGVQC
H7b: MEFGLSWLFLVALFRGVQC
H7c: MEFGLSWVFLVAAFRGVQC
H7d: MEFGLSWVFLVALFRGVQS
H7e: MEFGWSWLFLVAAFRGVQC
H7f: MEFGWSWLFLVAAFRGVQS

FIG. 10 (cont'd)

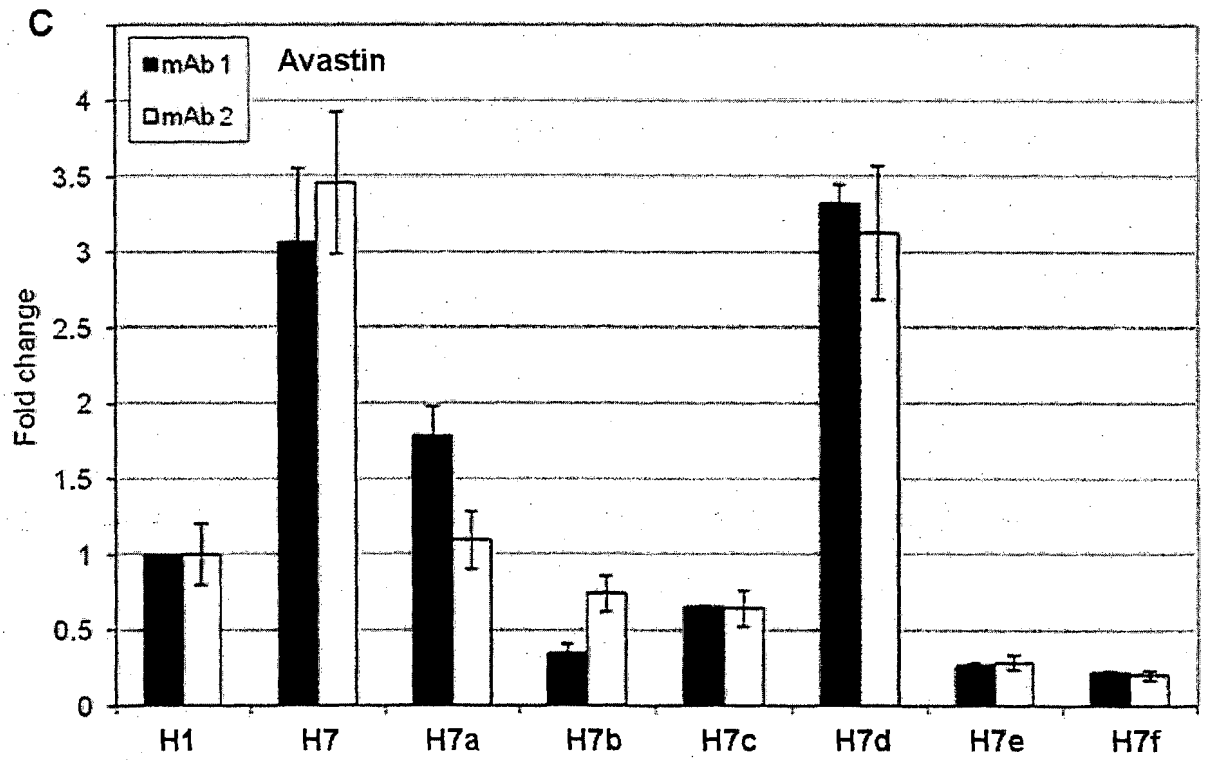

C
mAb 1
mAb 2
Avastin
Fold change
4
3.5
3
2.5
2
1.5
1
0.5
0
H1
H7
H7a
H7b
H7c
H7d
H7e
H7f

FIG. 11

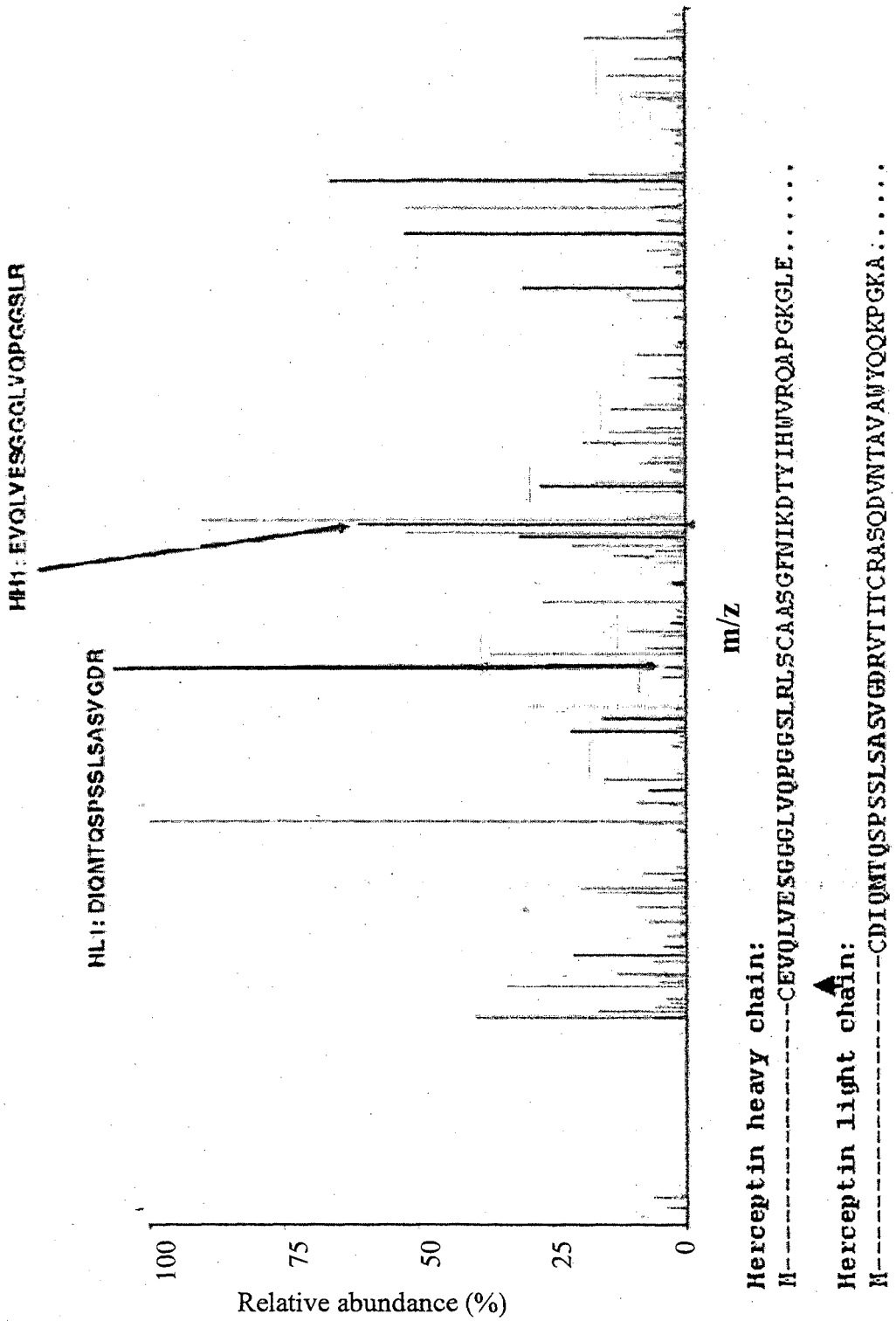

HH1: EVQLVESGGGLVQPGGSLR
HL1: DIQMTQSPSSLSASVGDR
m/z
Relative abundance (%)
100
75
50
25
0
Herceptin heavy chain:
M----------EVQLVESGGGLVQPGGSLRLSCAASGFNIKDTYIHWVRQAPGKGLE.....
Herceptin light chain:
M----------DIQMTQSPSSLSASVGDRVTITCRASQDVNTAVAWYQQKPGKA.....

FIG. 12

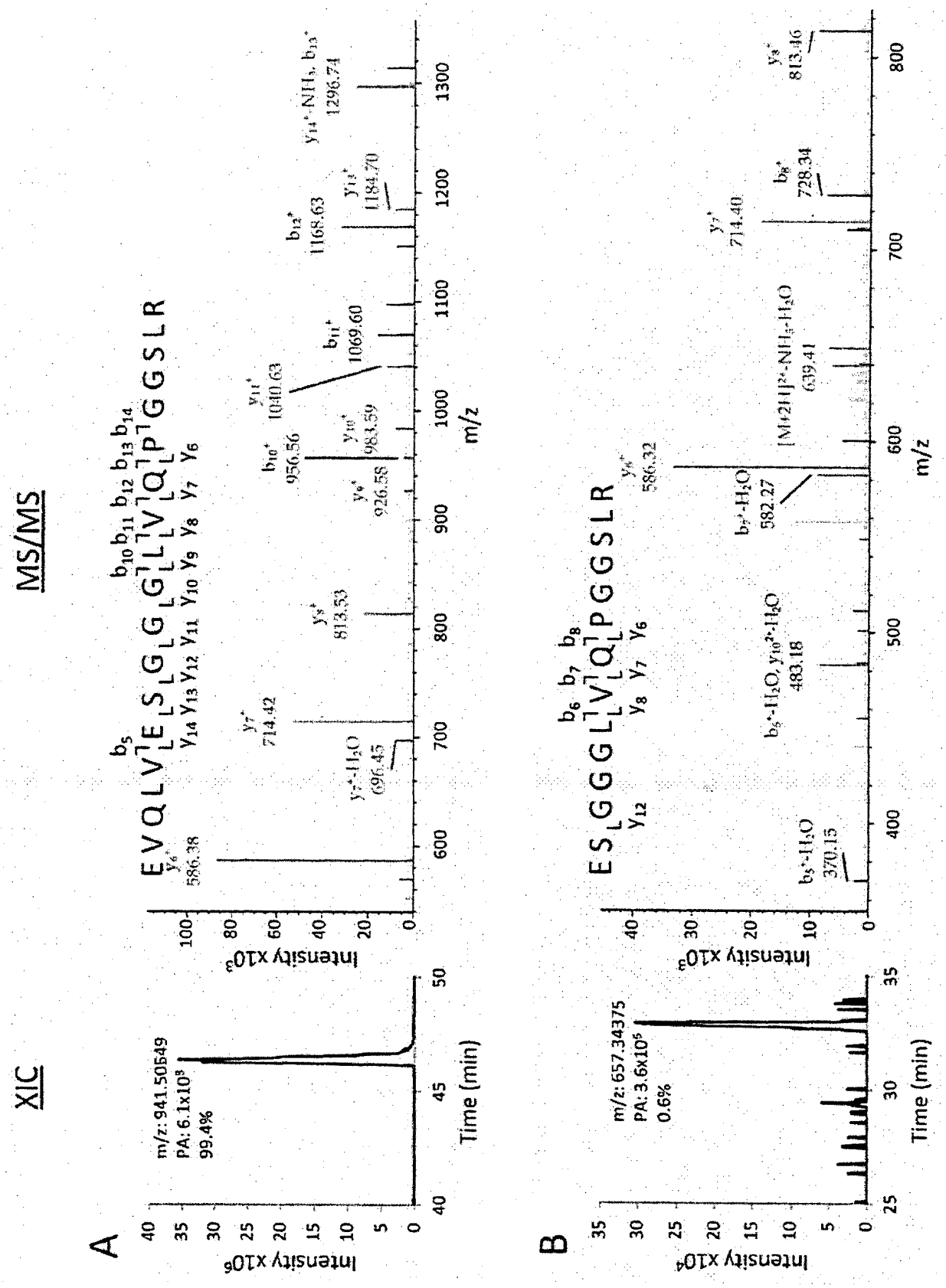

XIC
MS/MS
A
B
m/z: 941.50549
PA: 6.1x10⁵
99.4%
m/z: 657.34375
PA: 3.6x10⁵
0.6%
Intensity x10⁶
Intensity x10⁴
Intensity x10³
Time (min)
m/z
EVQLVTLESLGLGLLGTLLVTLQLLPTGGSLR
ESLGGGLLVTLQLLPTGGSLR

FIG. 12 (cont'd)

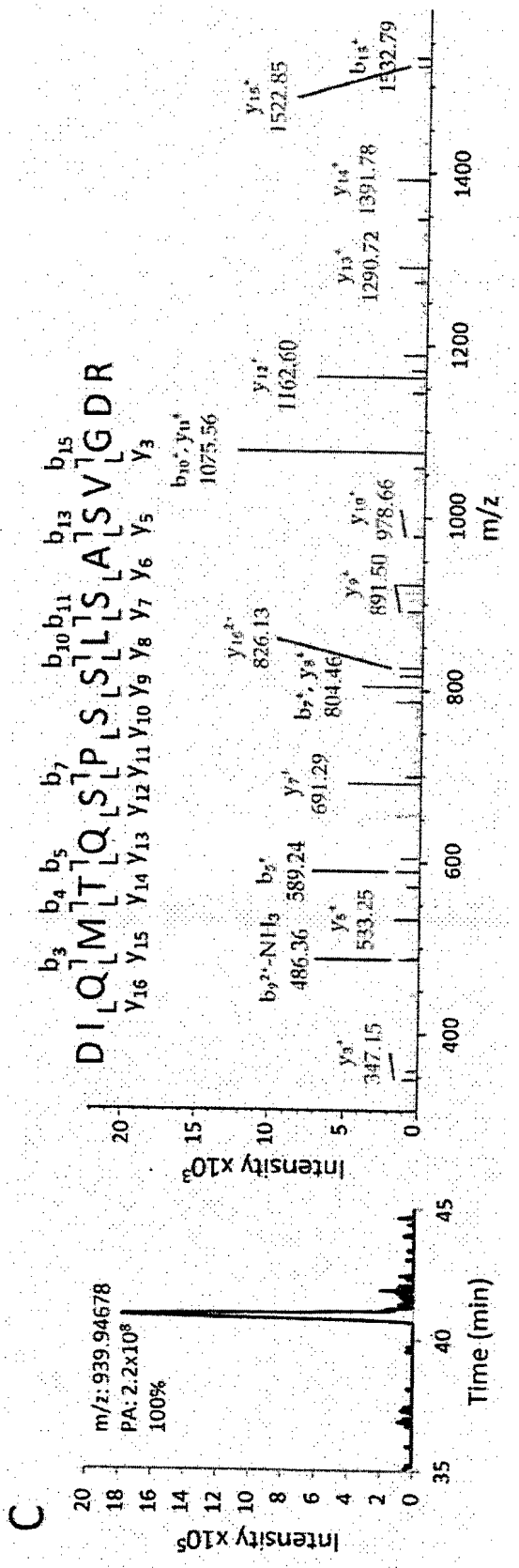
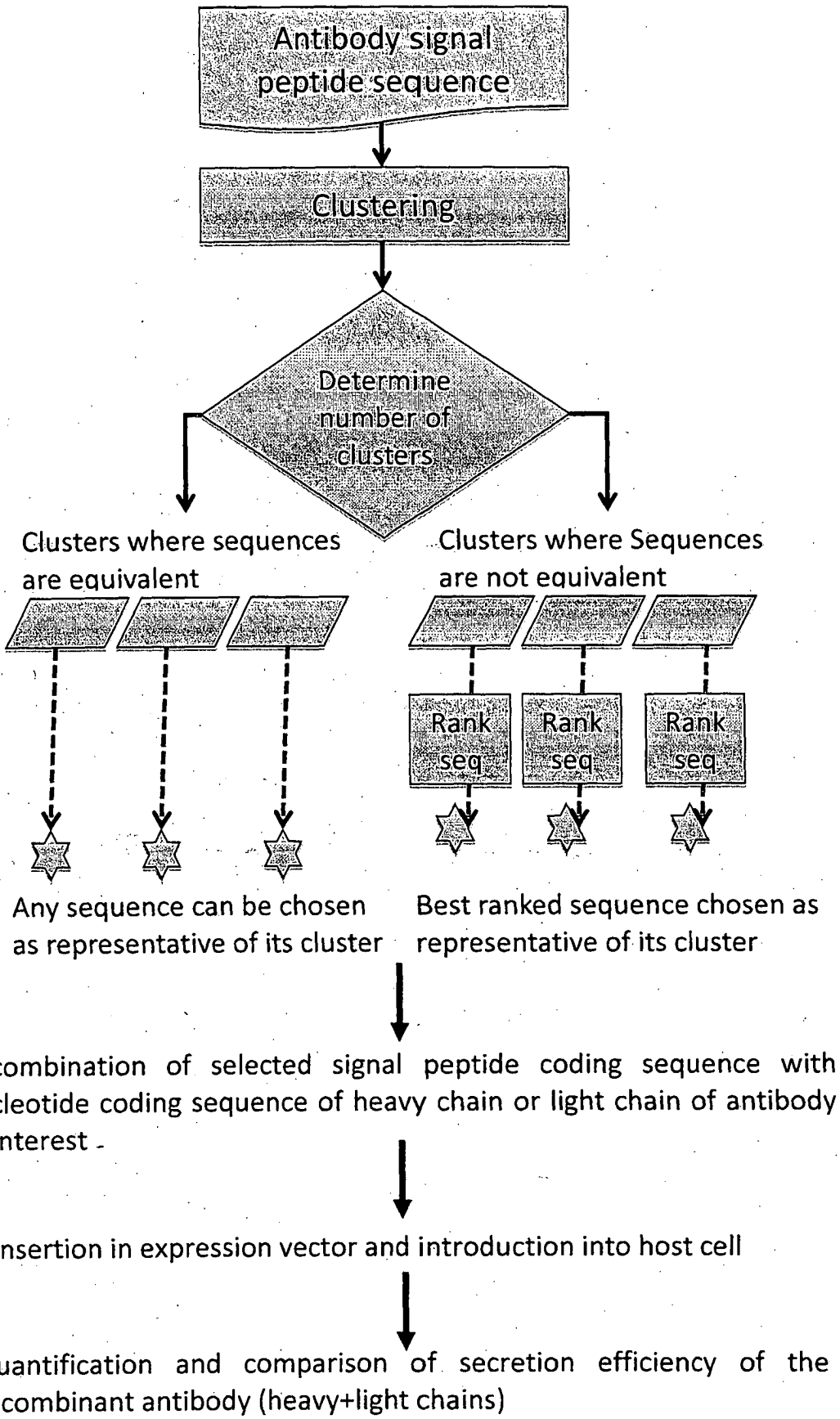

C
m/z:939.94678
PA: 2.2x10⁸
100%
Intensity x10⁵
Time (min)
Intensity x10³
m/z
D I L Q L M T T Q S P L S L L S L A S V G D R
b3 b4 b5 b7 b10 b11 b13 b15
y16 y15 y14 y13 y12 y11 y10 y9 y8 y7 y6 y5 y3
y3+ 347.15
b9 2+-NH3 486.36
b9+ 589.24
y5+ 533.25
y7+ 691.29
y16 2+ 826.13
b2+, y8+ 804.46
y9+ 891.50
y10+ 978.66
b10+, y11+ 1075.56
y12+ 1162.60
y13+ 1290.72
y14+ 1391.78
y15+ 1522.85
b15+ 1532.79

FIG. 13


Antibody signal peptide sequence
Clustering
Determine number of clusters
Clusters where sequences are equivalent
Clusters where Sequences are not equivalent
Rank seq
Rank seq
Rank seq
Any sequence can be chosen as representative of its cluster
Best ranked sequence chosen as representative of its cluster
Recombination of selected signal peptide coding sequence with nucleotide coding sequence of heavy chain or light chain of antibody of interest
Insertion in expression vector and introduction into host cell
Quantification and comparison of secretion efficiency of the recombinant antibody (heavy+light chains)