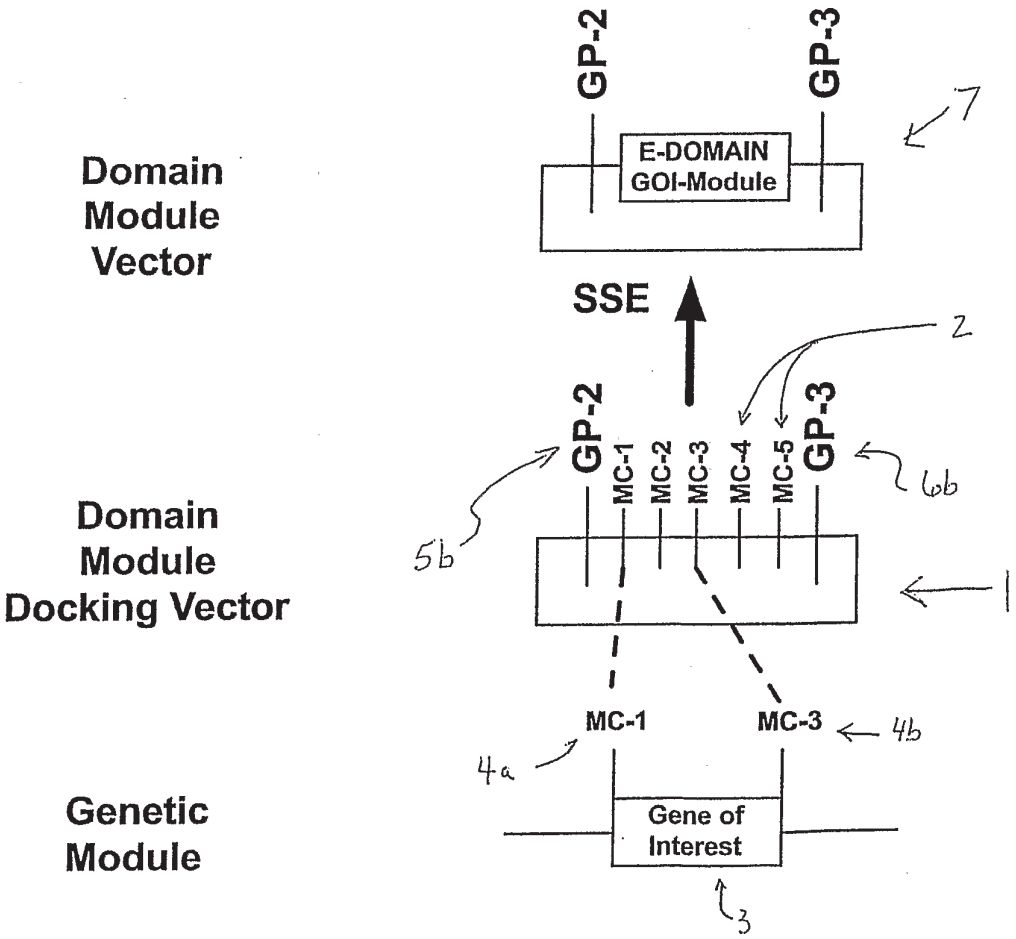

Domain Module Vector
Domain Module Docking Vector
Genetic Module
GP-2
GP-3
E-DOMAIN GOI-Module
7
SSE
2
GP-2
MC-1
MC-2
MC-3
MC-4
MC-5
GP-3
6b
5b
1
MC-1
MC-3
4b
4a
Gene of Interest
3

Fig. 1

Fig 2

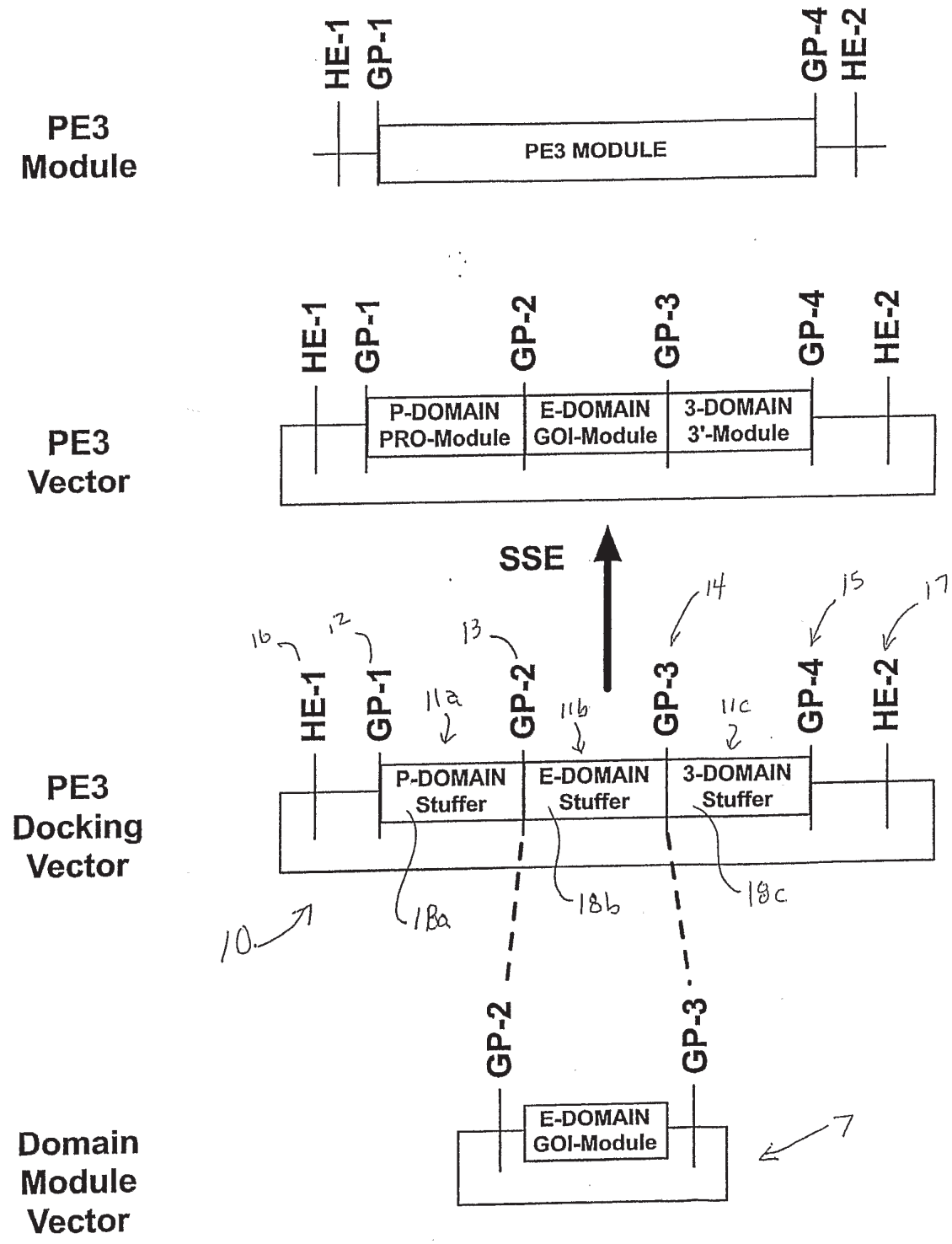
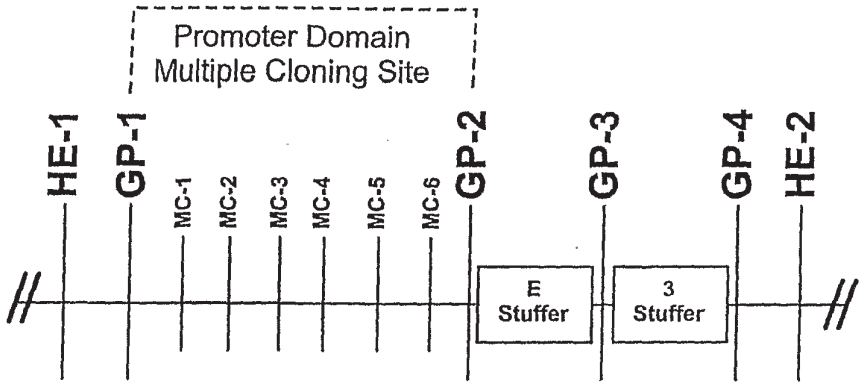
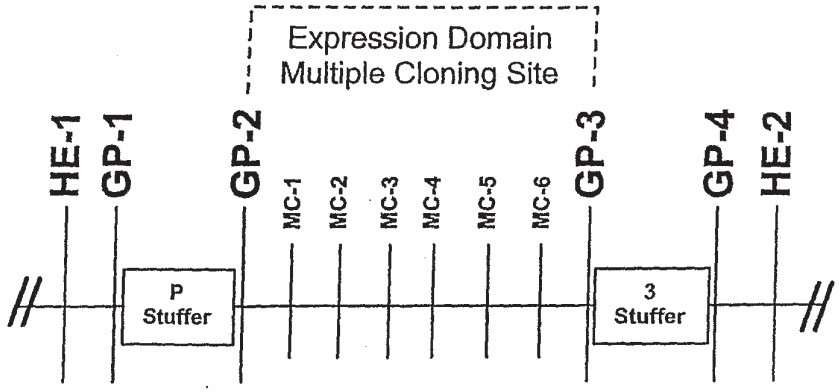

PE3 Module
HE-1
GP-1
GP-4
HE-2
PE3 MODULE
PE3 Vector
HE-1
GP-1
GP-2
GP-3
GP-4
HE-2
P-DOMAIN PRO-Module
E-DOMAIN GOI-Module
3-DOMAIN 3'-Module
SSE
PE3 Docking Vector
16
12
13
14
15
17
11a
11b
11c
P-DOMAIN Stuffer
E-DOMAIN Stuffer
3-DOMAIN Stuffer
18a
18b
18c
10
Domain Module Vector
E-DOMAIN GOI-Module
7

Fig. 3

**PE3-MC-Promoter Docking Vector**




**PE3-MC-Expression Docking Vector**




**PE3-MC-3' Docking Vector**

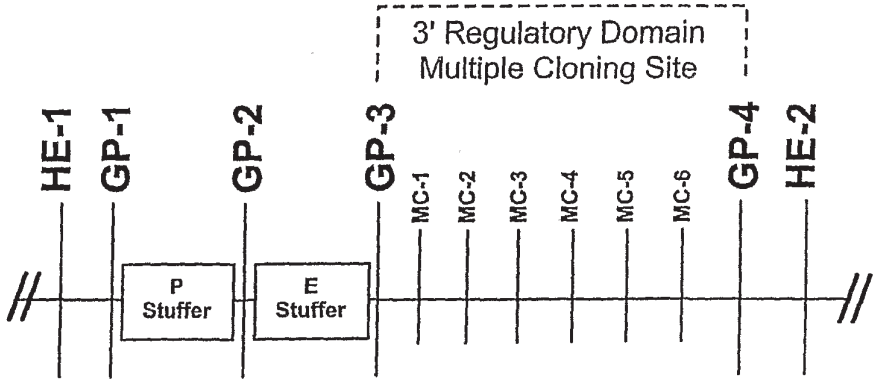


Fig. 9

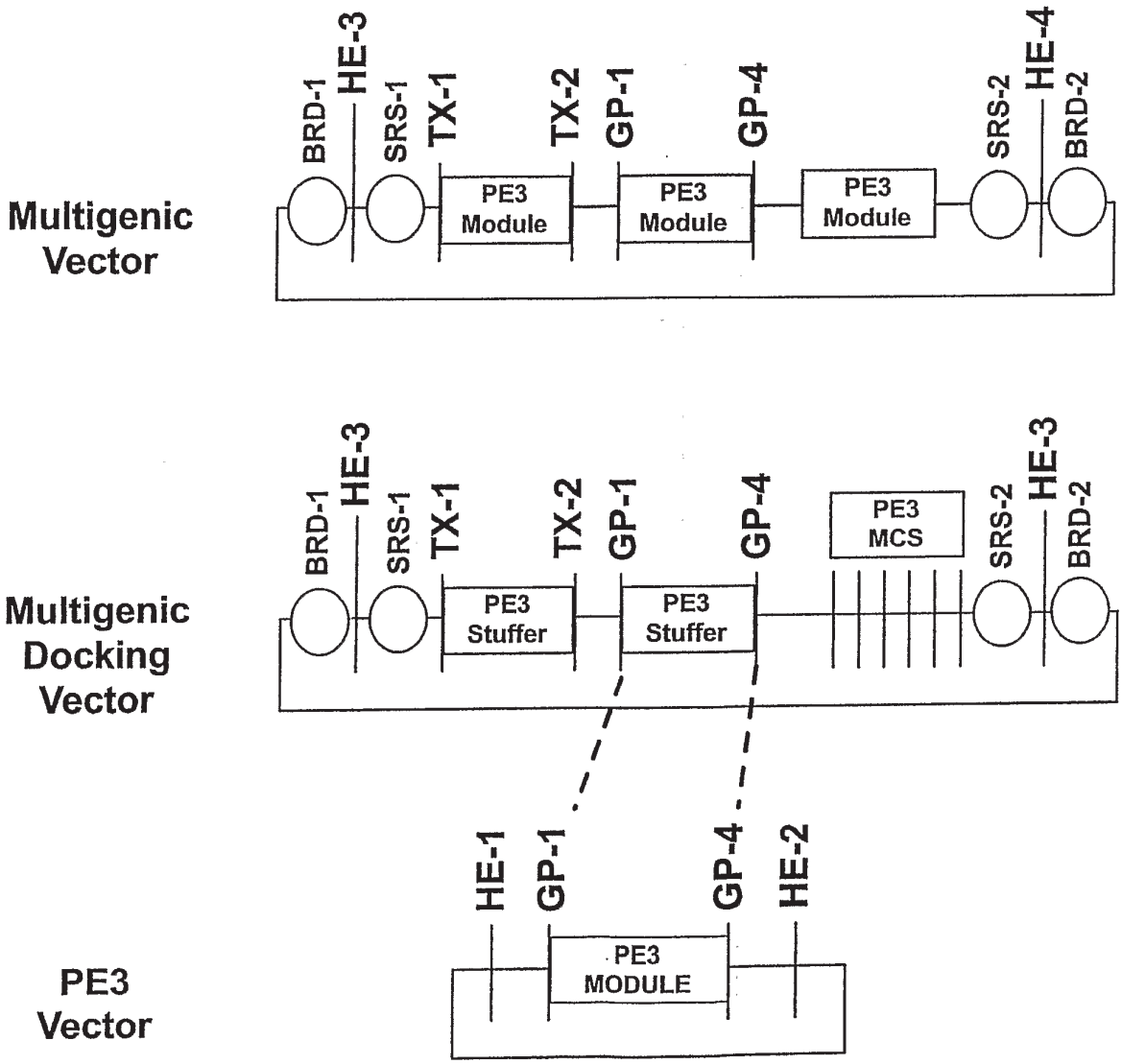
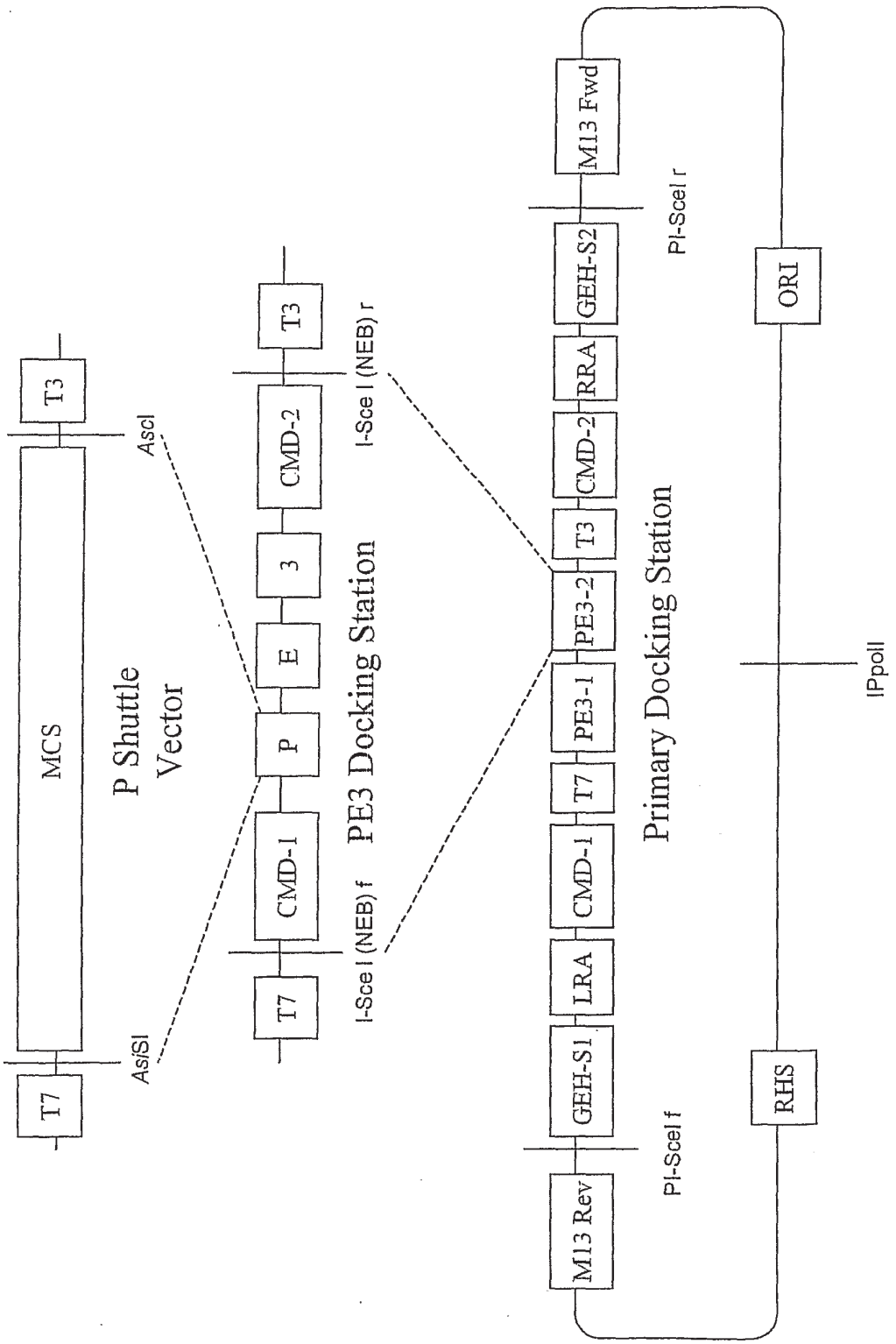

Multigenic Vector
BRD-1
HE-3
SRS-1
TX-1
TX-2
GP-1
GP-4
SRS-2
HE-4
BRD-2
PE3 Module
PE3 Module
PE3 Module
Multigenic Docking Vector
BRD-1
HE-3
SRS-1
TX-1
TX-2
GP-1
GP-4
PE3 MCS
SRS-2
HE-3
BRD-2
PE3 Stuffer
PE3 Stuffer
PE3 Vector
HE-1
GP-1
GP-4
HE-2
PE3 MODULE

Fig. 5


T7
MCS
T3
AsiSI
AscI
P Shuttle Vector
T7
CMD-1
P
E
3
CMD-2
T3
I-Sce I (NEB) f
I-Sce I (NEB) r
PE3 Docking Station
M13 Rev
GEH-S1
LRA
CMD-1
T7
PE3-1
PE3-2
T3
CMD-2
RRA
GEH-S2
M13 Fwd
PI-SceI f
PI-SceI r
Primary Docking Station
RHS
ORI
IPpoII

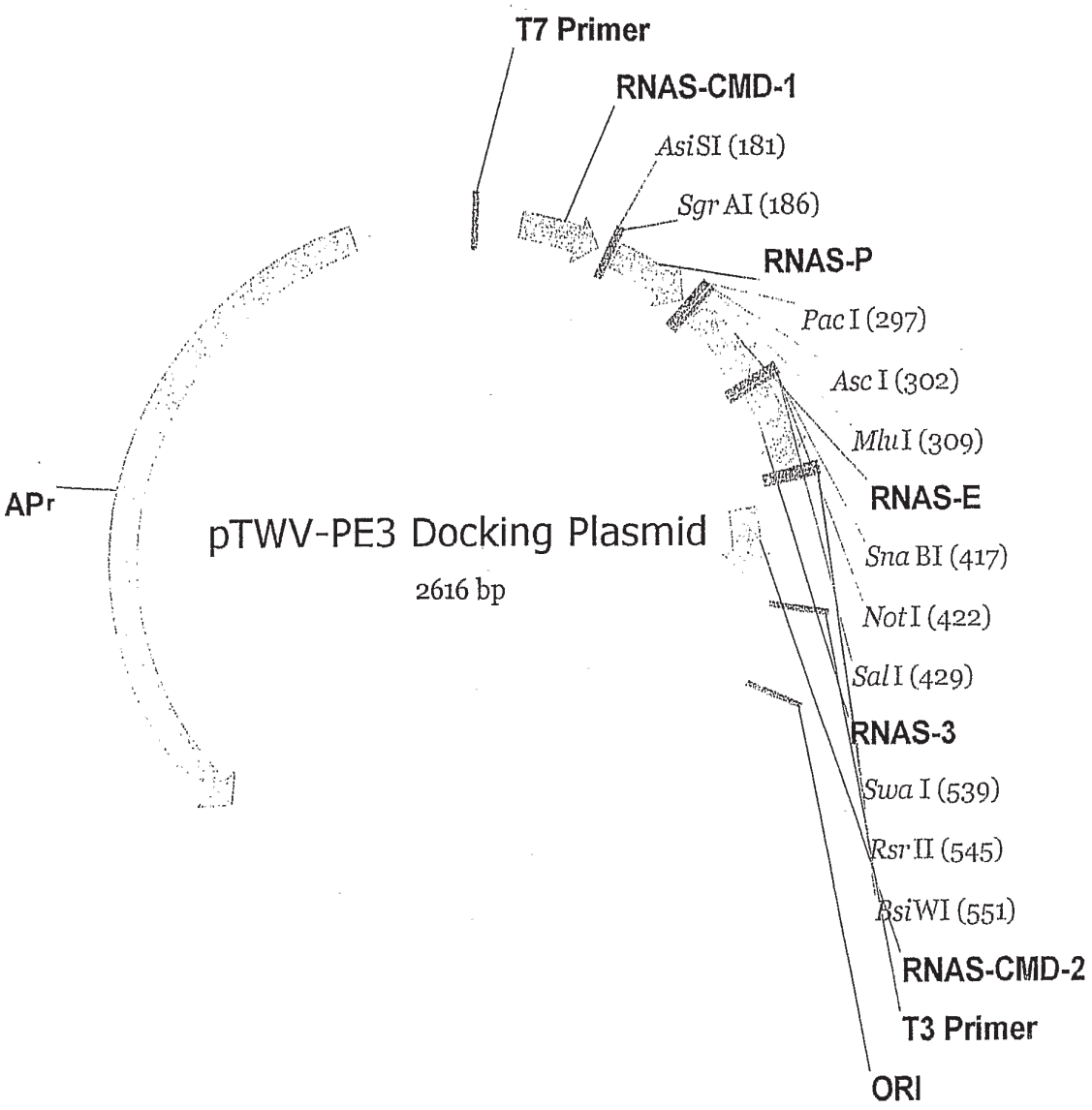
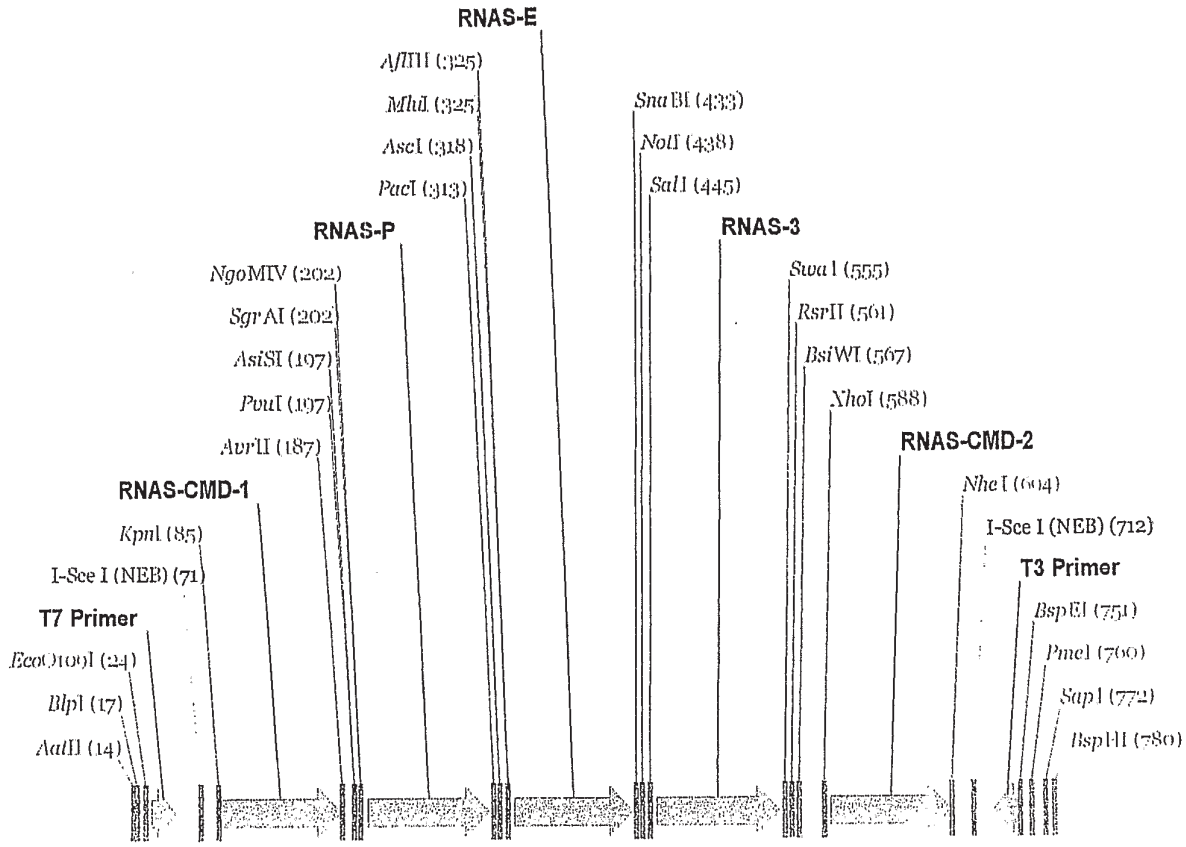

T7 Primer
RNAS-CMD-1
AsiSI (181)
Sgr AI (186)
RNAS-P
Pac I (297)
Asc I (302)
MluI (309)
RNAS-E
Sna BI (417)
Not I (422)
Sal I (429)
RNAS-3
Swa I (539)
Rsr II (545)
BsiWI (551)
RNAS-CMD-2
T3 Primer
ORI
APr
pTWV-PE3 Docking Plasmid
2616 bp

Fig. 6




TWV-PE3 Docking Plasmid

792 bp

Fig 7

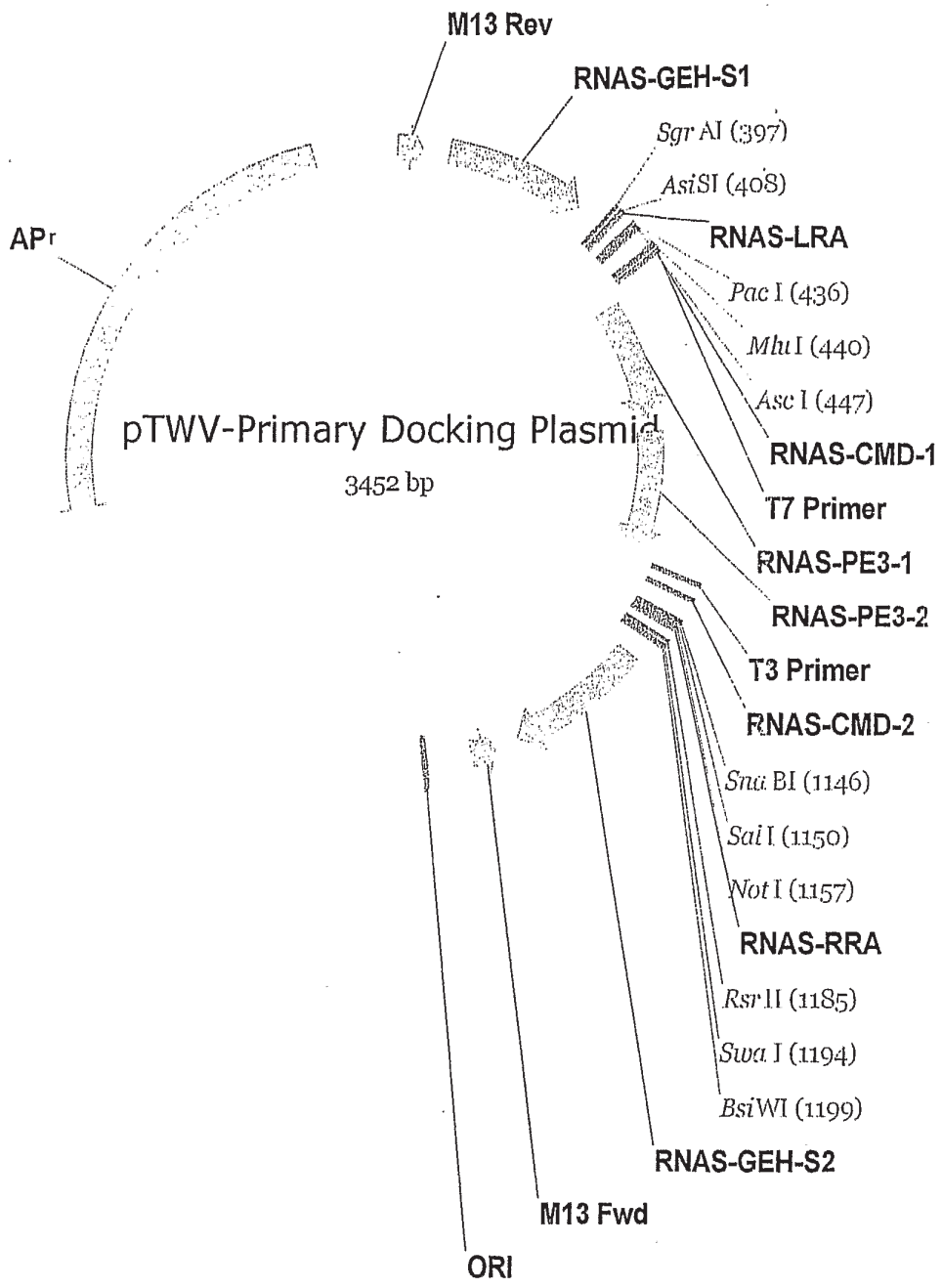
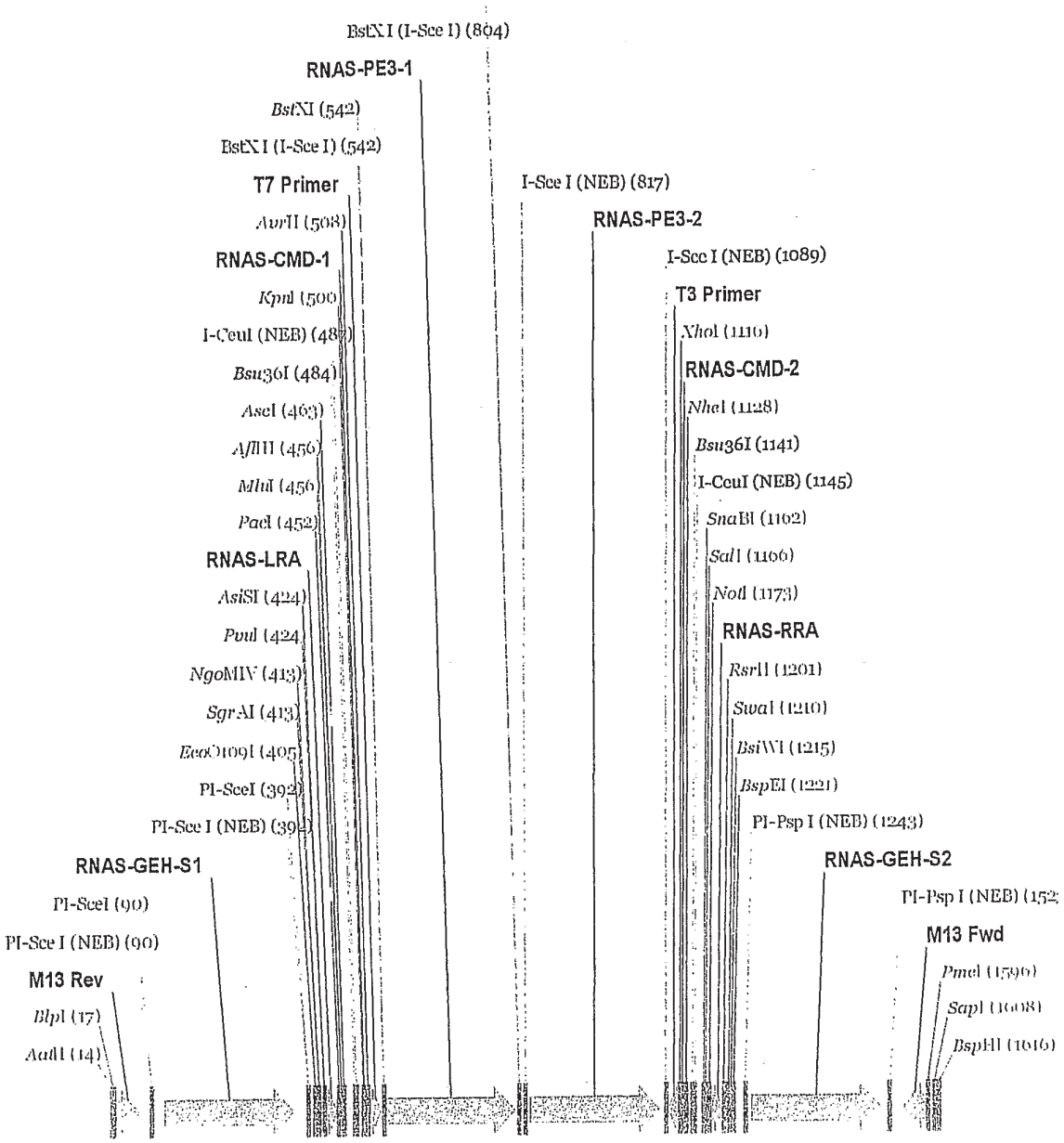

M13 Rev
RNAS-GEH-S1
Sgr AI (397)
AsiSI (408)
RNAS-LRA
APr
Pac I (436)
Mlu I (440)
Asc I (447)
pTWV-Primary Docking Plasmid
3452 bp
RNAS-CMD-1
T7 Primer
RNAS-PE3-1
RNAS-PE3-2
T3 Primer
RNAS-CMD-2
Sna BI (1146)
Sal I (1150)
Not I (1157)
RNAS-RRA
Rsr II (1185)
Swa I (1194)
BsiWI (1199)
RNAS-GEH-S2
M13 Fwd
ORI

Fig. 8




TWV-Primary Docking Plasmid

1628 bp

Fig. 9

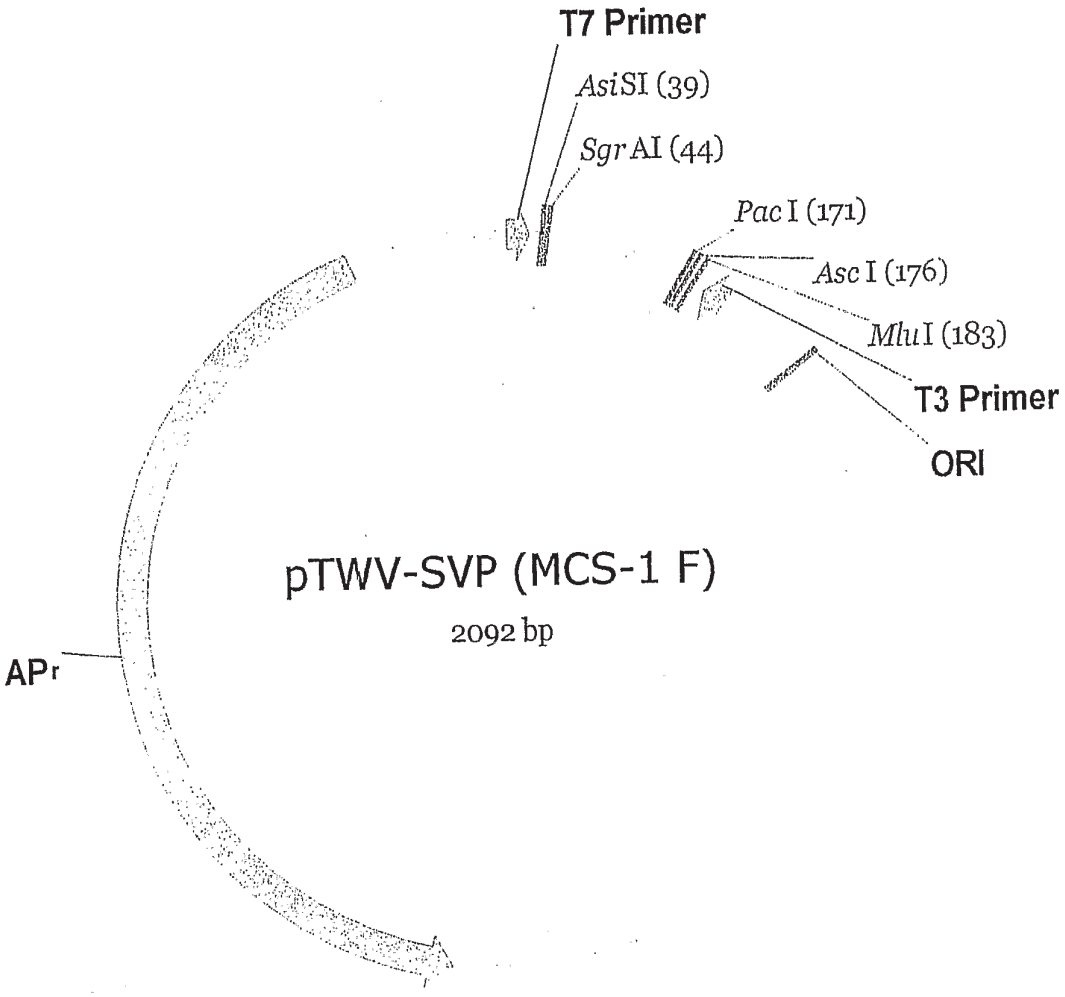
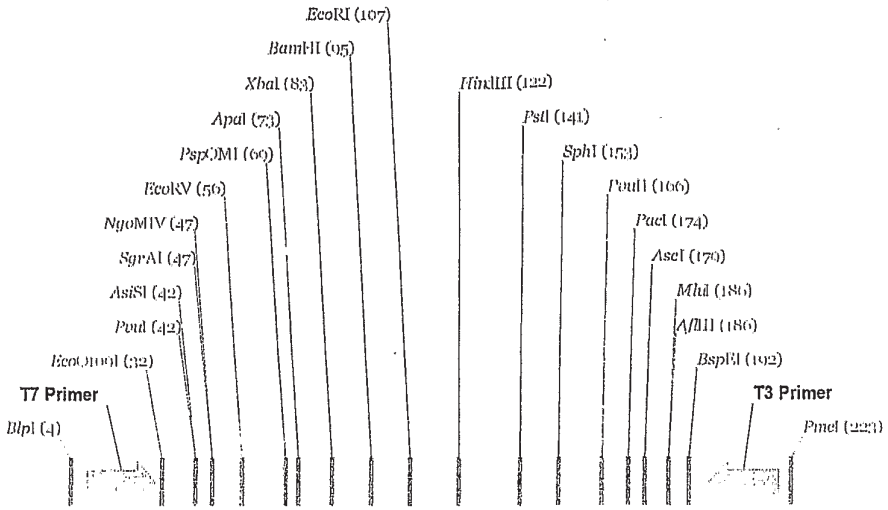

T7 Primer
AsiSI (39)
SgrAI (44)
PacI (171)
AscI (176)
MluI (183)
T3 Primer
ORI
pTWV-SVP (MCS-1 F)
2092 bp
APr

Fig. 10




TWV-SVP (MCS-1 F)

234 bp

Fig. 11

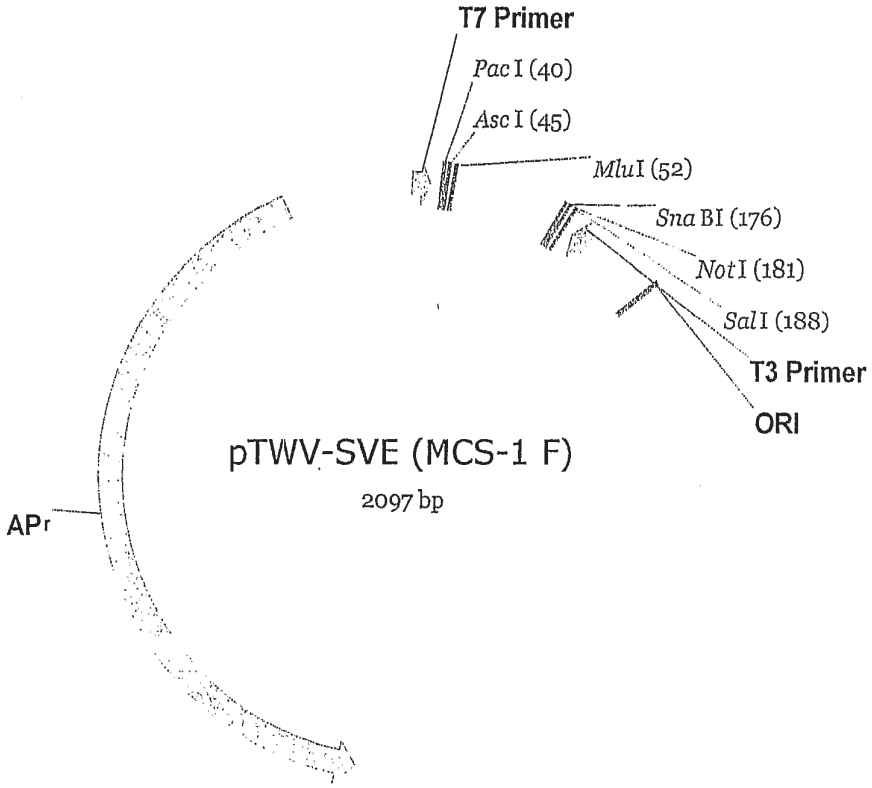

T7 Primer
Pac I (40)
Asc I (45)
Mlu I (52)
Sna BI (176)
Not I (181)
Sal I (188)
T3 Primer
ORI
pTWV-SVE (MCS-1 F)
2097 bp
APr

Fig. 12

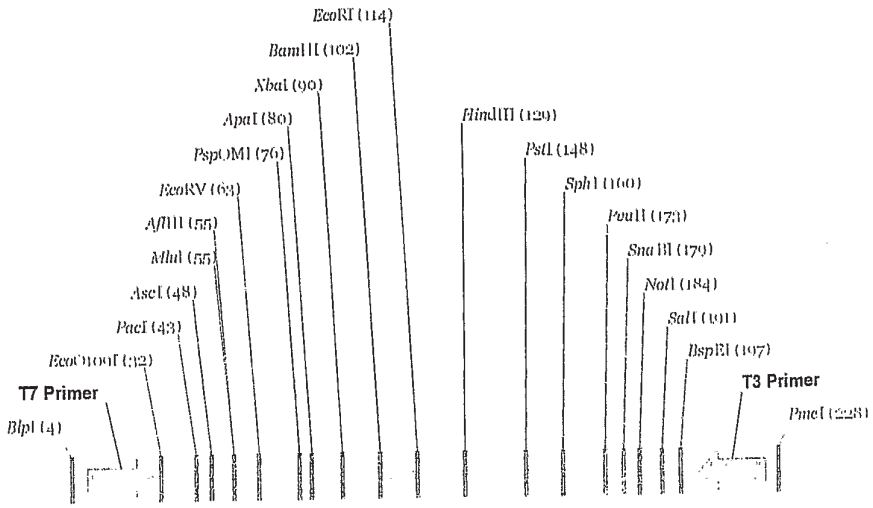

EcoRI (114)
BamHI (102)
XbaI (90)
ApaI (86)
PspOMI (76)
EcoRV (68)
AflII (55)
MluI (55)
AscI (48)
PacI (43)
EcoO109I (32)
T7 Primer
BlpI (4)
HindIII (129)
PstI (148)
SphI (160)
PauII (173)
SnaBI (179)
NotI (184)
SalI (191)
BspEI (197)
T3 Primer
PmeI (228)
TWV-SVE (MCS-1 F)
239 bp

Fig. 13

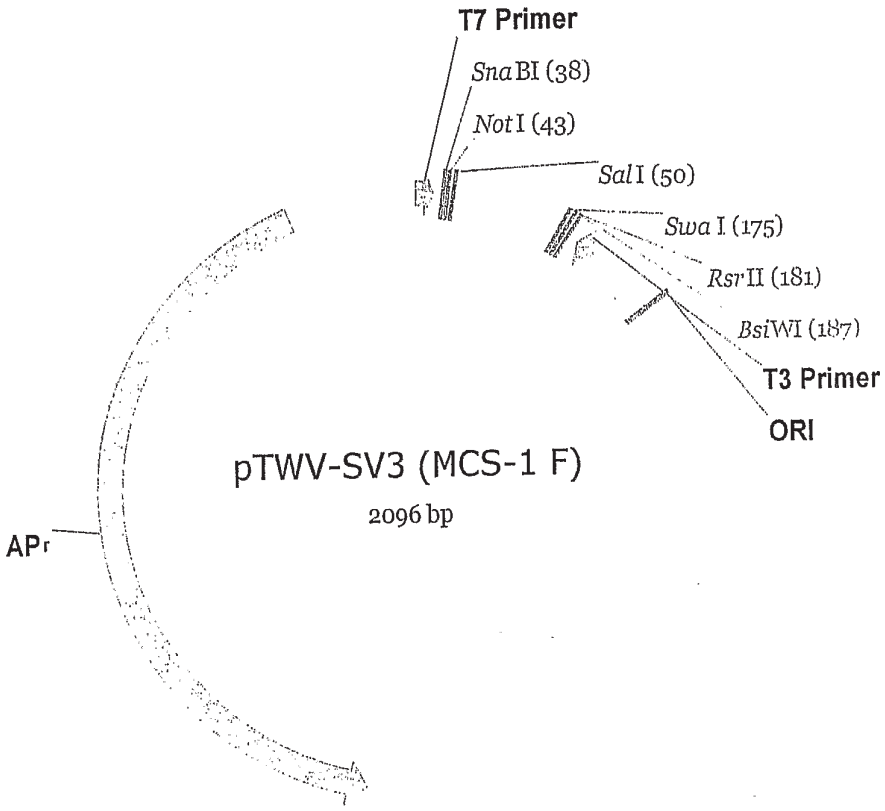
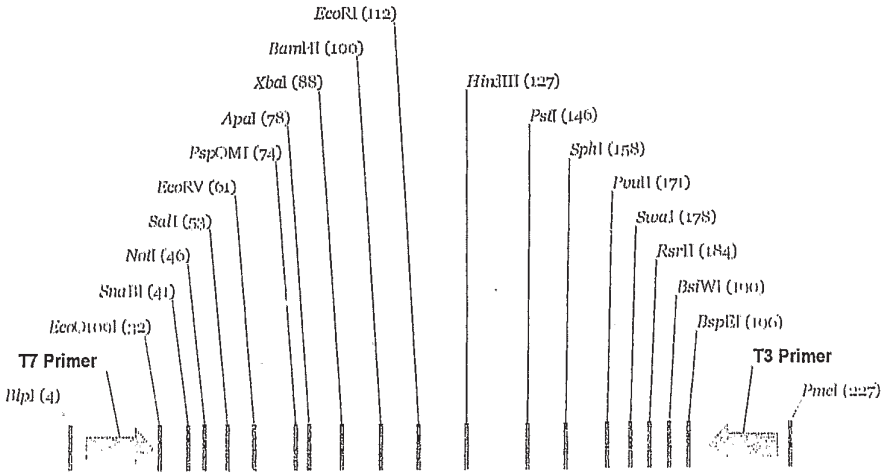

T7 Primer
SnaBI (38)
NotI (43)
SalI (50)
SwaI (175)
RsrII (181)
BsiWI (187)
T3 Primer
ORI
pTWV-SV3 (MCS-1 F)
2096 bp
APr

Fig. 14




TWV-SV3 (MCS-1 F)

238 bp

Fig. 15

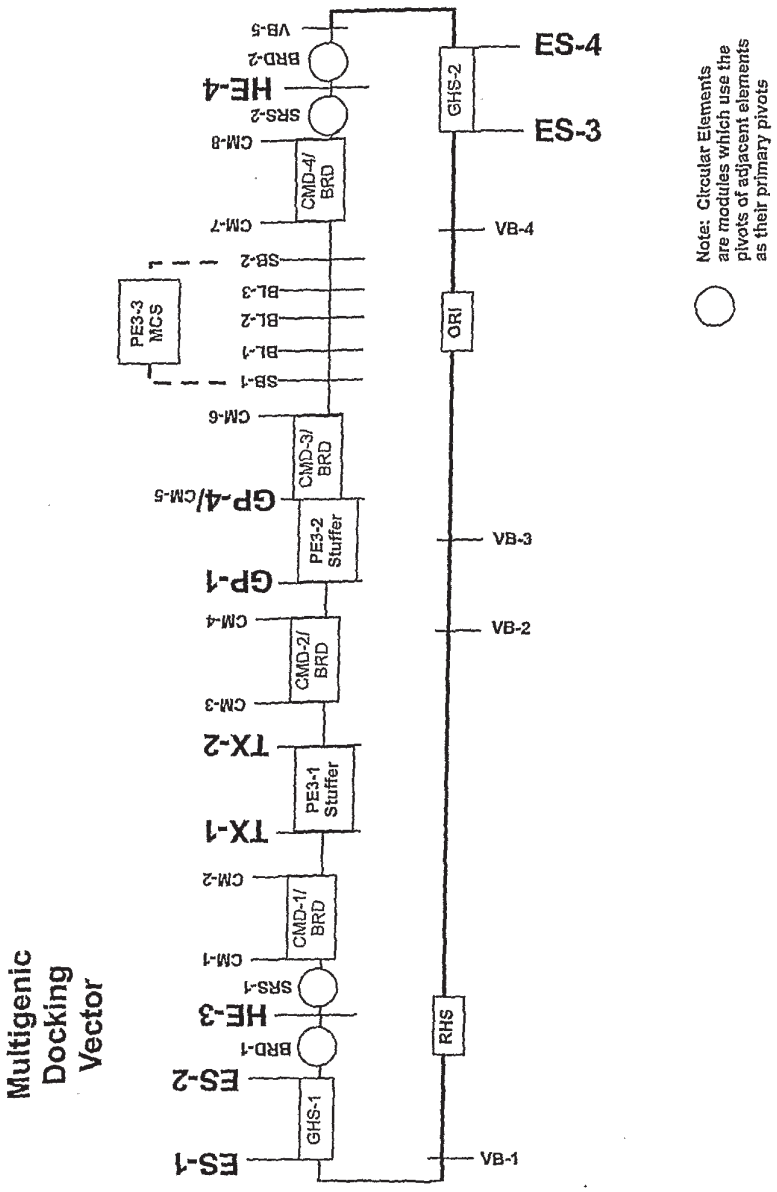

Multigenic Docking Vector
ES-4
ES-3
VB-4
ORI
VB-3
VB-2
RHS
VB-1
GHS-2
GHS-1
VB-5
BRD-2
HE-4
SRS-2
CM-8
CMD-4/ BRD
CM-7
SB-2
BL-3
BL-2
BL-1
SB-1
PE3-3 MCS
CM-6
CMD-3/ BRD
GP-4/CM-5
PE3-2 Stuffer
GP-1
CM-4
CMD-2/ BRD
CM-3
TX-2
PE3-1 Stuffer
TX-1
CM-2
CMD-1/ BRD
CM-1
SRS-1
HE-3
BRD-1
ES-2
ES-1
Note: Circular Elements are modules which use the pivots of adjacent elements as their primary pivots

Fig. 16

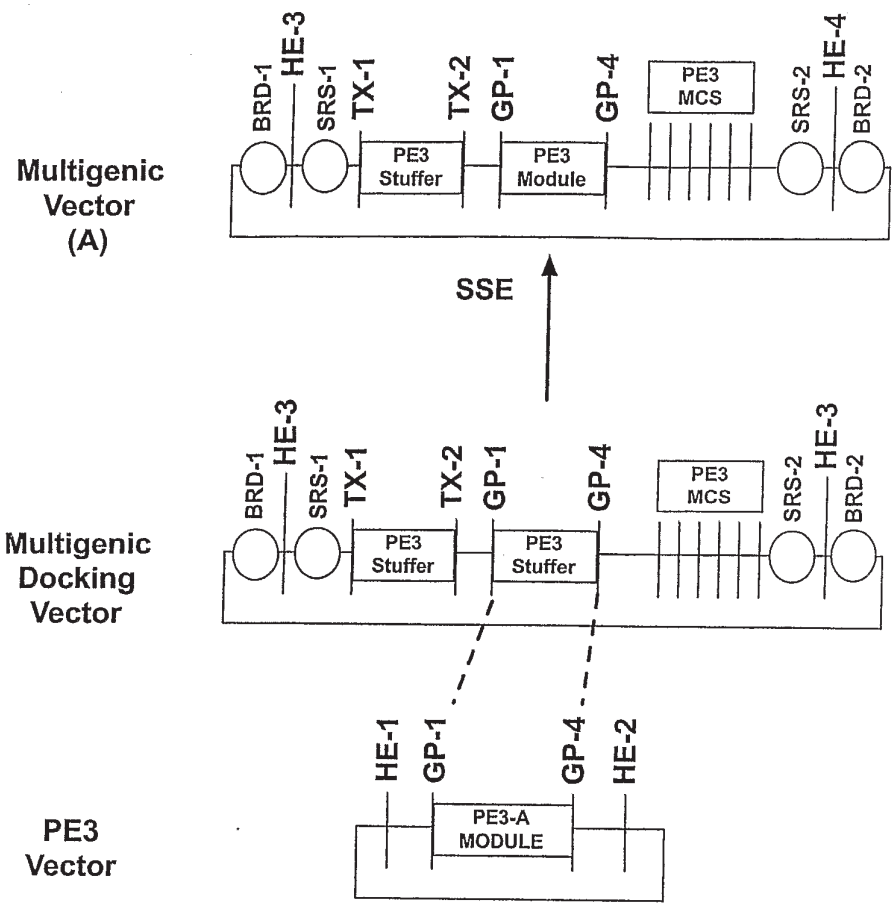

Multigenic Vector (A)
BRD-1
HE-3
SRS-1
TX-1
TX-2
GP-1
GP-4
PE3 MCS
SRS-2
HE-4
BRD-2
PE3 Stuffer
PE3 Module
SSE
Multigenic Docking Vector
BRD-1
HE-3
SRS-1
TX-1
TX-2
GP-1
GP-4
PE3 MCS
SRS-2
HE-3
BRD-2
PE3 Stuffer
PE3 Stuffer
PE3 Vector
HE-1
GP-1
GP-4
HE-2
PE3-A MODULE

Fig. 17

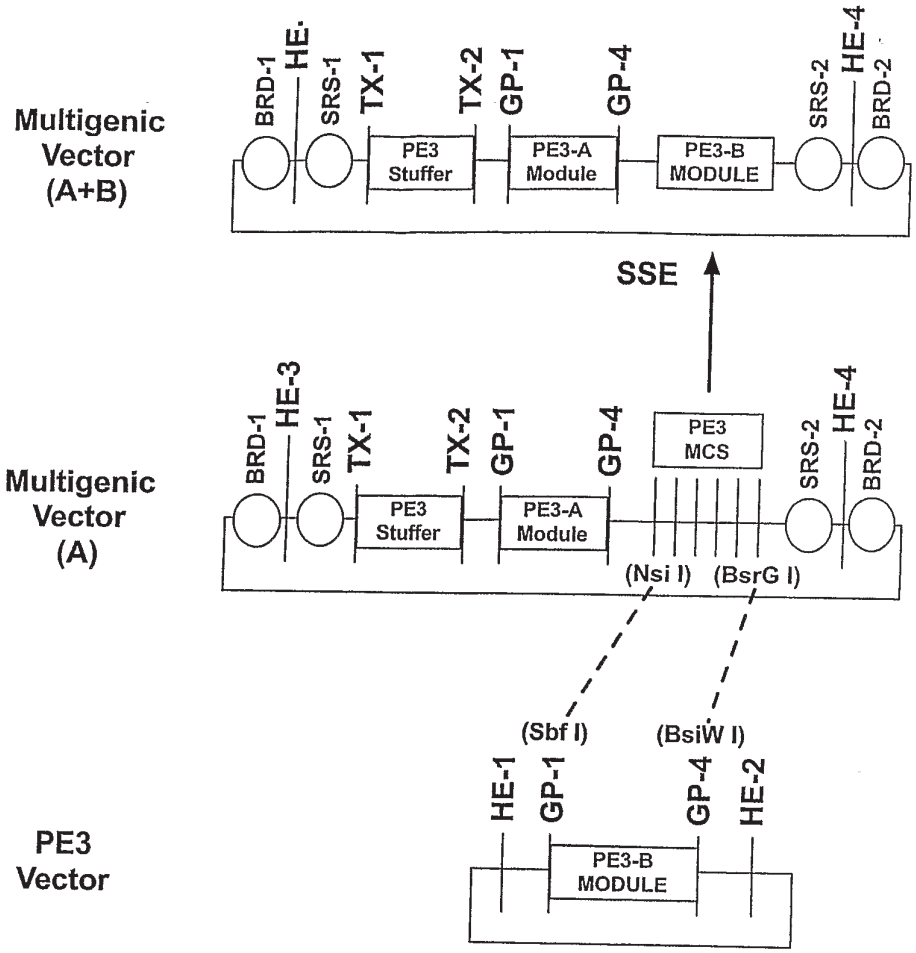

Multigenic Vector (A+B)
BRD-1
HE-
SRS-1
TX-1
TX-2
GP-1
GP-4
SRS-2
HE-4
BRD-2
PE3 Stuffer
PE3-A Module
PE3-B MODULE
SSE
Multigenic Vector (A)
HE-3
PE3 MCS
(Nsi I)
(BsrG I)
(Sbf I)
(BsiW I)
PE3 Vector
HE-1
GP-1
GP-4
HE-2

Fig. 18

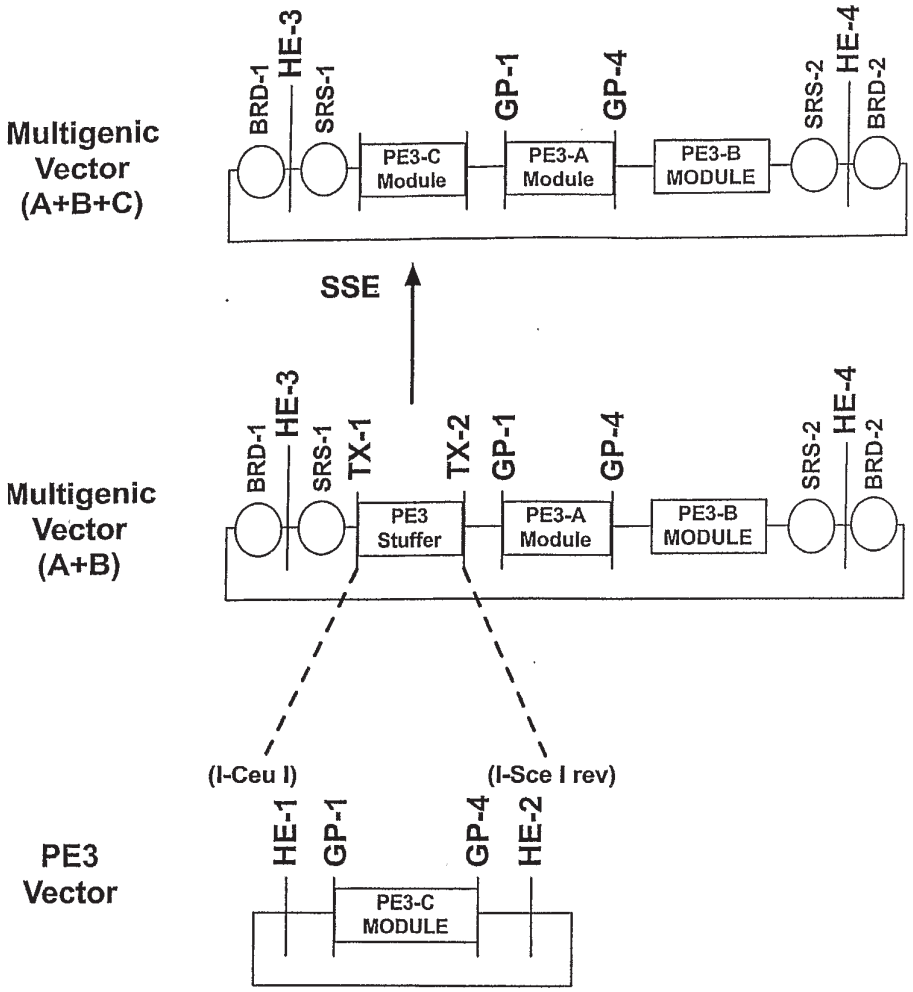

Multigenic Vector (A+B+C)
BRD-1
HE-3
SRS-1
PE3-C Module
GP-1
PE3-A Module
GP-4
PE3-B MODULE
SRS-2
HE-4
BRD-2
SSE
Multigenic Vector (A+B)
BRD-1
HE-3
SRS-1
TX-1
TX-2
GP-1
PE3 Stuffer
PE3-A Module
GP-4
PE3-B MODULE
SRS-2
HE-4
BRD-2
(I-Ceu I)
(I-Sce I rev)
PE3 Vector
HE-1
GP-1
PE3-C MODULE
GP-4
HE-2

Fig. 19

Fig. 20

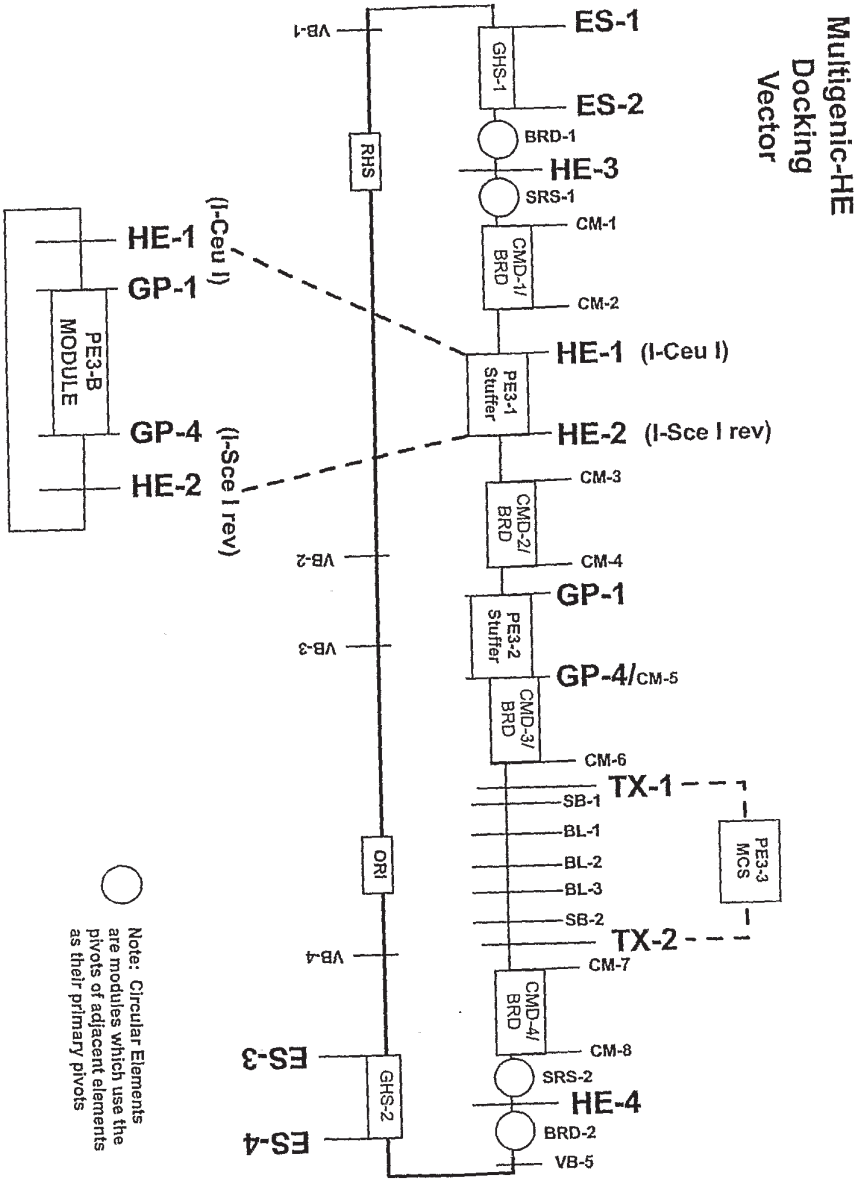
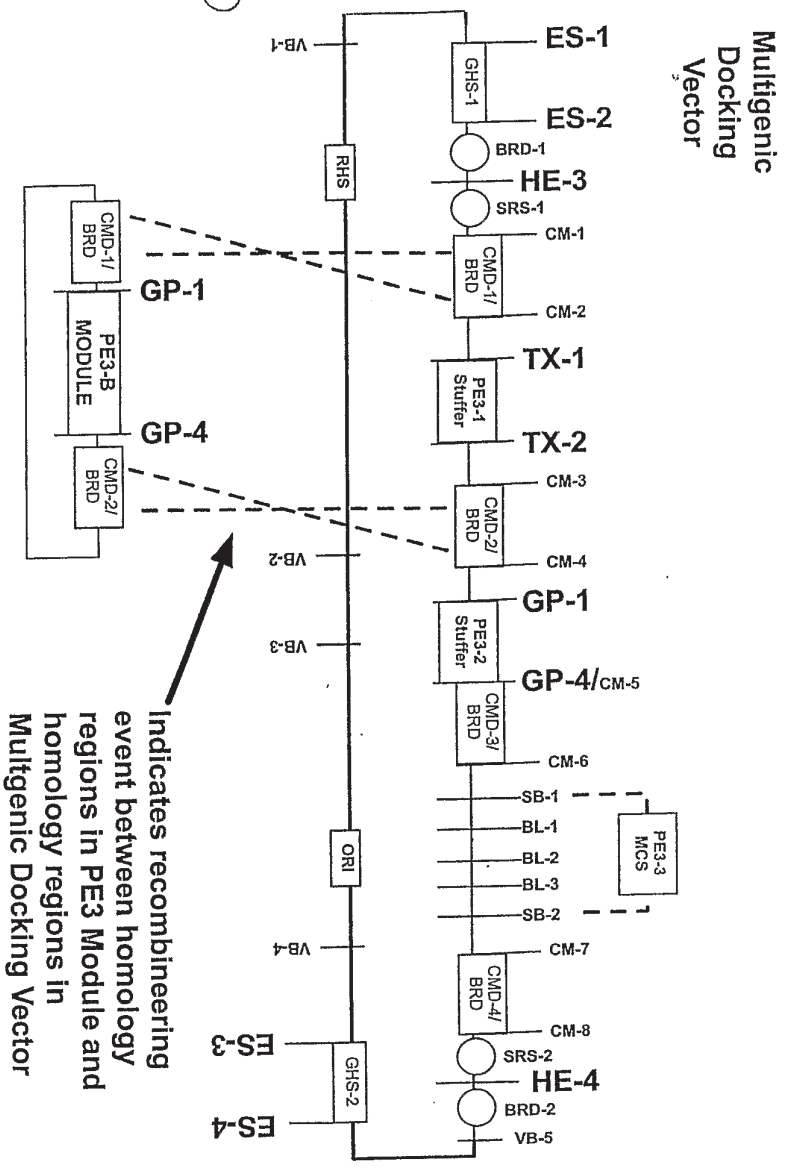

Multigenic-HE Docking Vector
VB-1
RHS
ES-1
GHS-1
ES-2
BRD-1
HE-3
SRS-1
CM-1
CMD-1/ BRD
CM-2
HE-1 (I-Ceu I)
PE3-1 Stuffer
HE-2 (I-Sce I rev)
CM-3
CMD-2/ BRD
CM-4
VB-2
GP-1
PE3-2 Stuffer
VB-3
GP-4/CM-5
CMD-3/ BRD
CM-6
TX-1
SB-1
BL-1
BL-2
BL-3
SB-2
TX-2
PE3-3 MCS
ORI
VB-4
CM-7
CMD-4/ BRD
CM-8
SRS-2
HE-4
BRD-2
VB-5
ES-3
GHS-2
ES-4
HE-1
GP-1
PE3-B MODULE
GP-4
HE-2
(I-Ceu I)
(I-Sce I rev)
Note: Circular Elements are modules which use the pivots of adjacent elements as their primary pivots

Fig. 21


Multigenic Docking Vector
ES-1
ES-2
HE-3
TX-1
TX-2
GP-1
GP-4
GP-1
GP-4/CM-5
HE-4
ES-3
ES-4
VB-1
VB-2
VB-3
VB-4
VB-5
RHS
ORI
GHS-1
GHS-2
BRD-1
SRS-1
SRS-2
BRD-2
CM-1
CM-2
CM-3
CM-4
CM-6
CM-7
CM-8
SB-1
BL-1
BL-2
BL-3
SB-2
CMD-1/ BRD
CMD-2/ BRD
CMD-3/ BRD
CMD-4/ BRD
PE3-B MODULE
PE3-1 Stuffer
PE3-2 Stuffer
PE3-3 MCS
Indicates recombineering event between homology regions in PE3 Module and homology regions in Multgenic Docking Vector