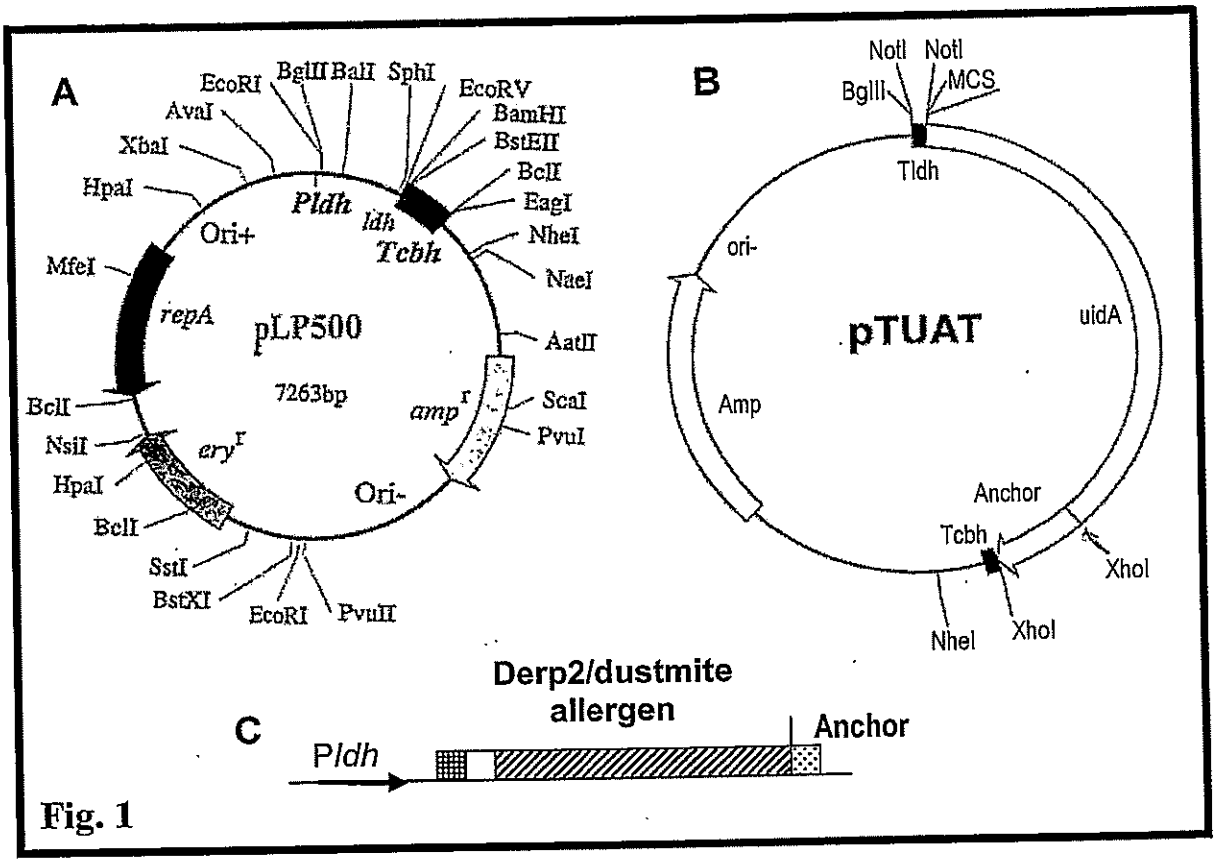
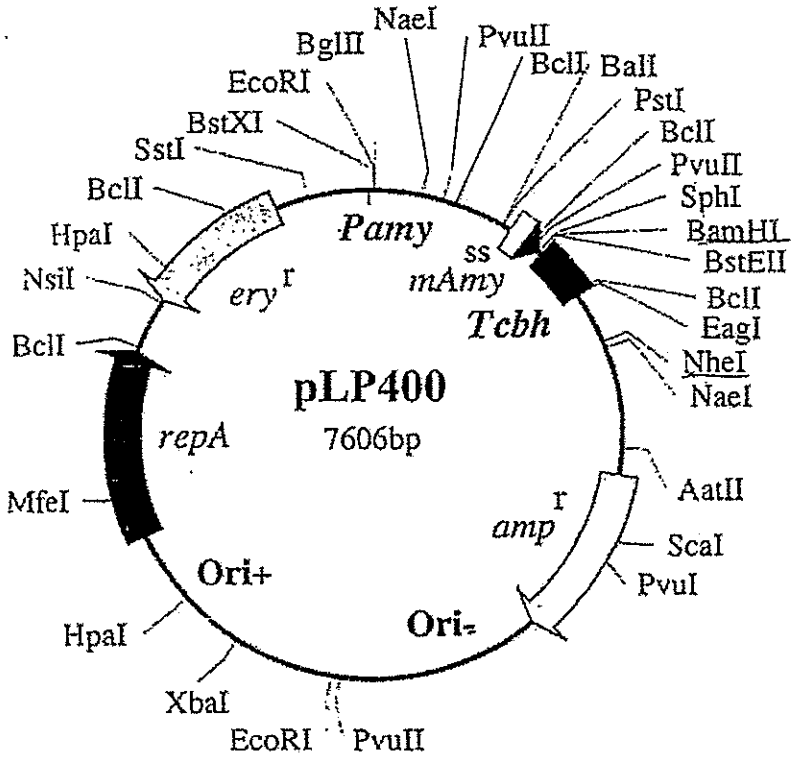

A
EcoRI
BglII
BalI
SphI
EcoRV
AvaI
BamHI
XbaI
BstEII
HpaI
BclI
Pldh
ldh
EagI
Ori+
Tcbh
NheI
MfeI
NaeI
repA
pLP500
AatII
7263bp
BclI
amp r
ScaI
NsiI
ery r
PvuI
HpaI
Ori-
BclI
SstI
BstXI
EcoRI
PvuII
B
NotI
NotI
BglII
MCS
Tldh
ori-
pTUAT
uidA
Amp
Anchor
Tcbh
XhoI
NheI
XhoI
C
Derp2/dustmite allergen
Anchor
Pldh

Fig. 1

Fig. 2


NaeI
BglII
PvuII
BclI
BalI
EcoRI
PstI
BstXI
BclII
SstI
PvuII
BclI
SphI
Pamy
BamHI
HpaI
ss
BstEII
NsiI
ery r
mAmy
BclII
Tcbh
BclI
EagI
NheI
pLP400
NaeI
repA
7606bp
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MfeI
amp r
ScaI
Ori+
PvuI
Ori-
HpaI
XbaI
EcoRI
PvuII

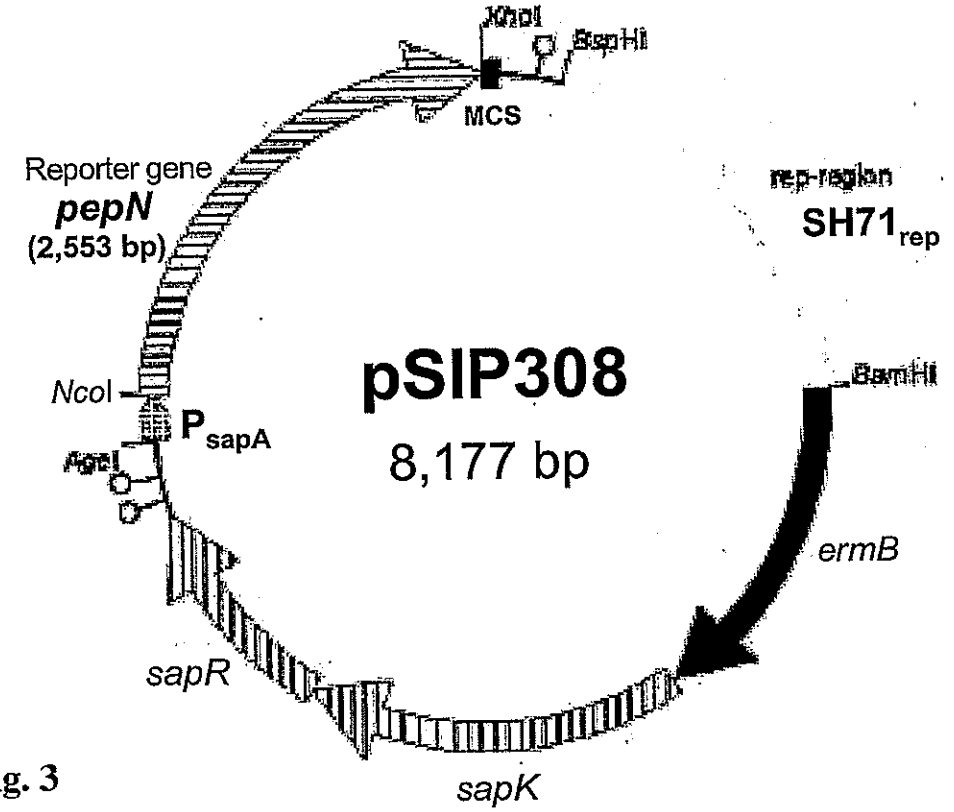

XhoI
BspHI
MCS
Reporter gene
pepN
(2,553 bp)
rep-region
SH71rep
pSIP308
8,177 bp
NcoI
PsapA
AgeI
BamHI
ermB
sapR
sapK

Fig. 3

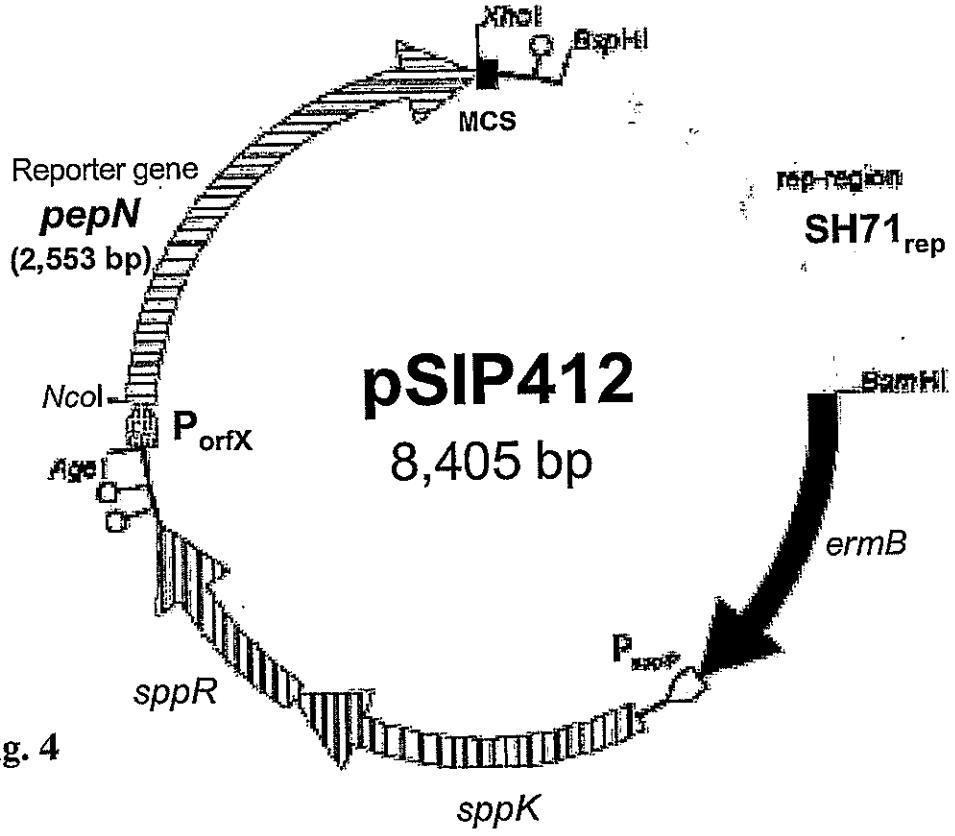

XhoI
BspHI
MCS
Reporter gene
pepN
(2,553 bp)
rep-region
SH71rep
pSIP412
8,405 bp
NcoI
PorfX
AgeI
BamHI
ermB
sppR
sppK

Fig. 4

Fig. 5

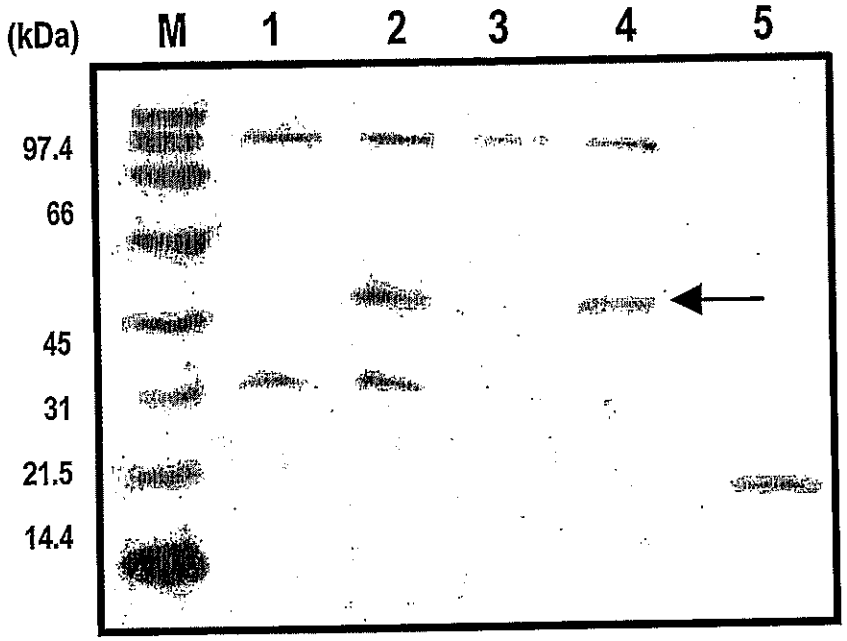
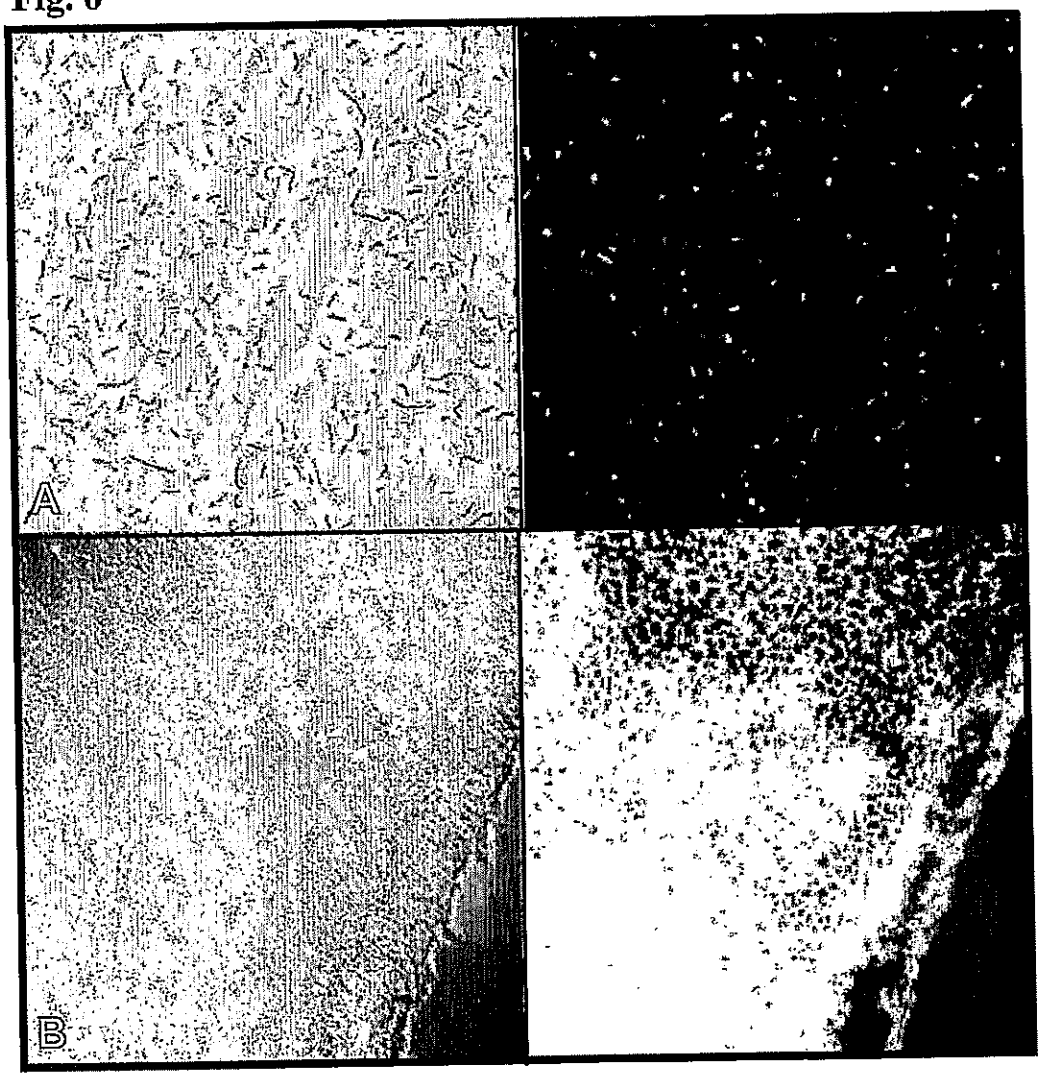


Fig. 6



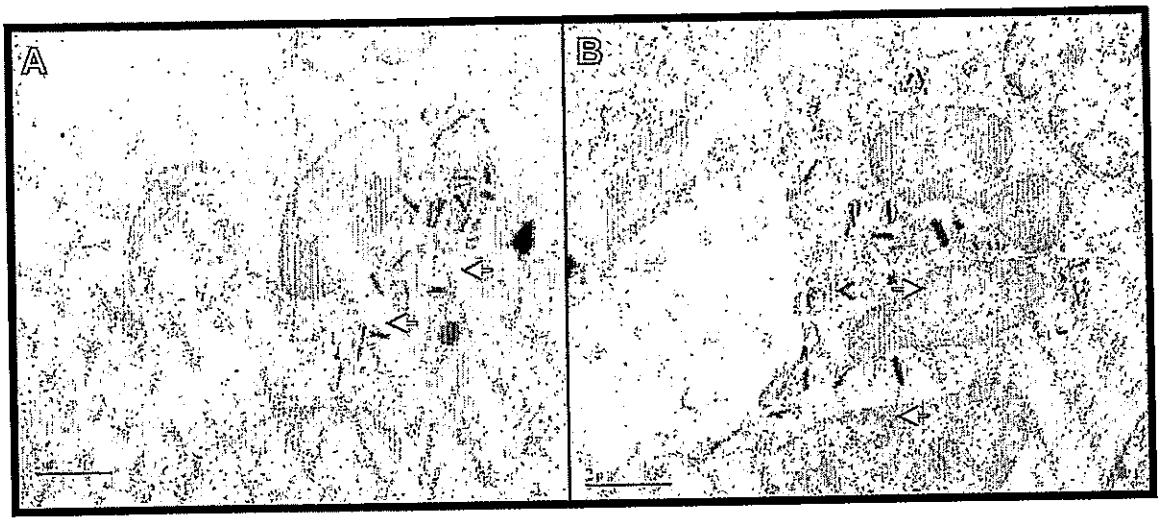


Fig. 7

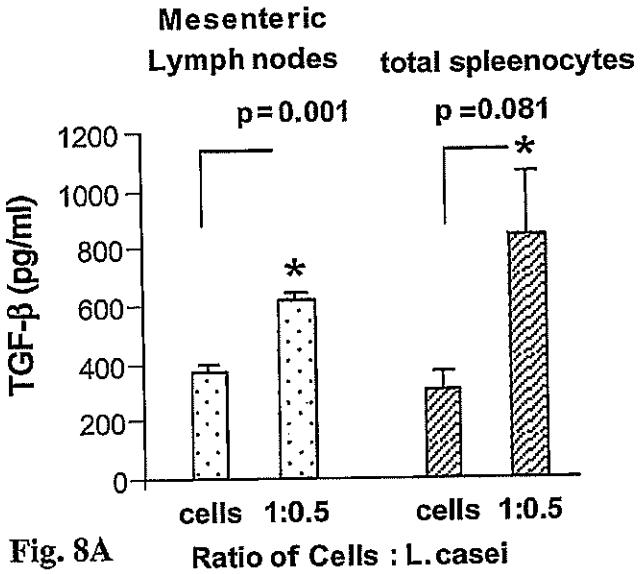


Fig. 8A

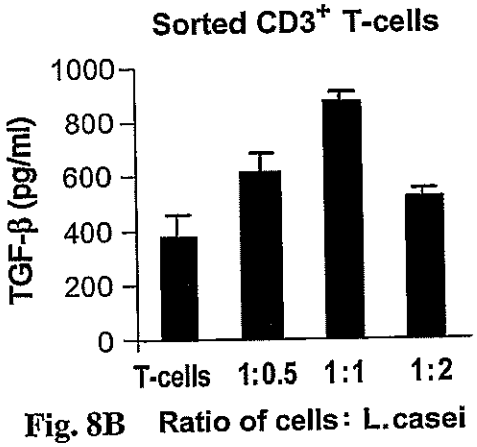


Fig. 8B

Fig. 9A

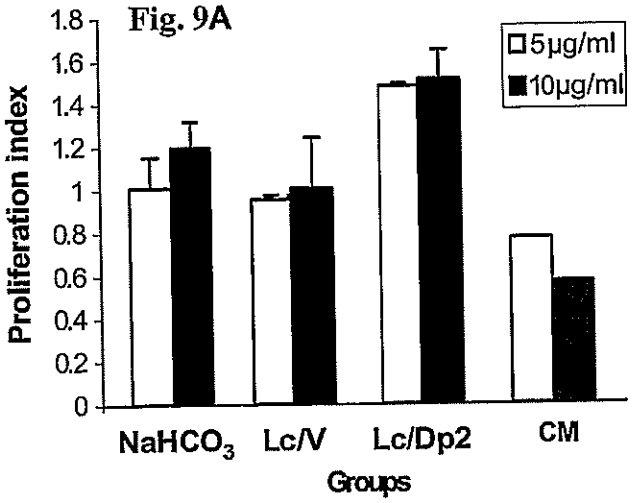
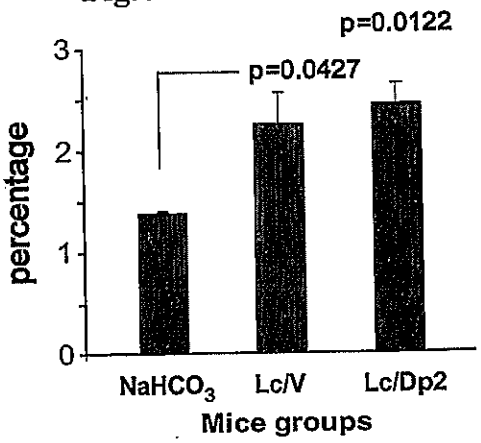


Fig. 9B



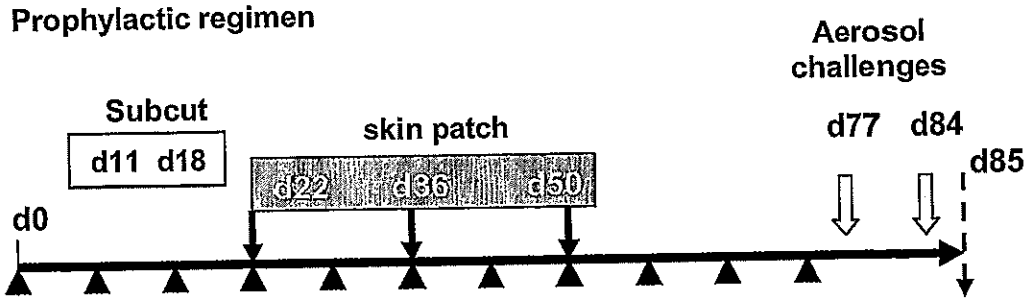


Fig. 10

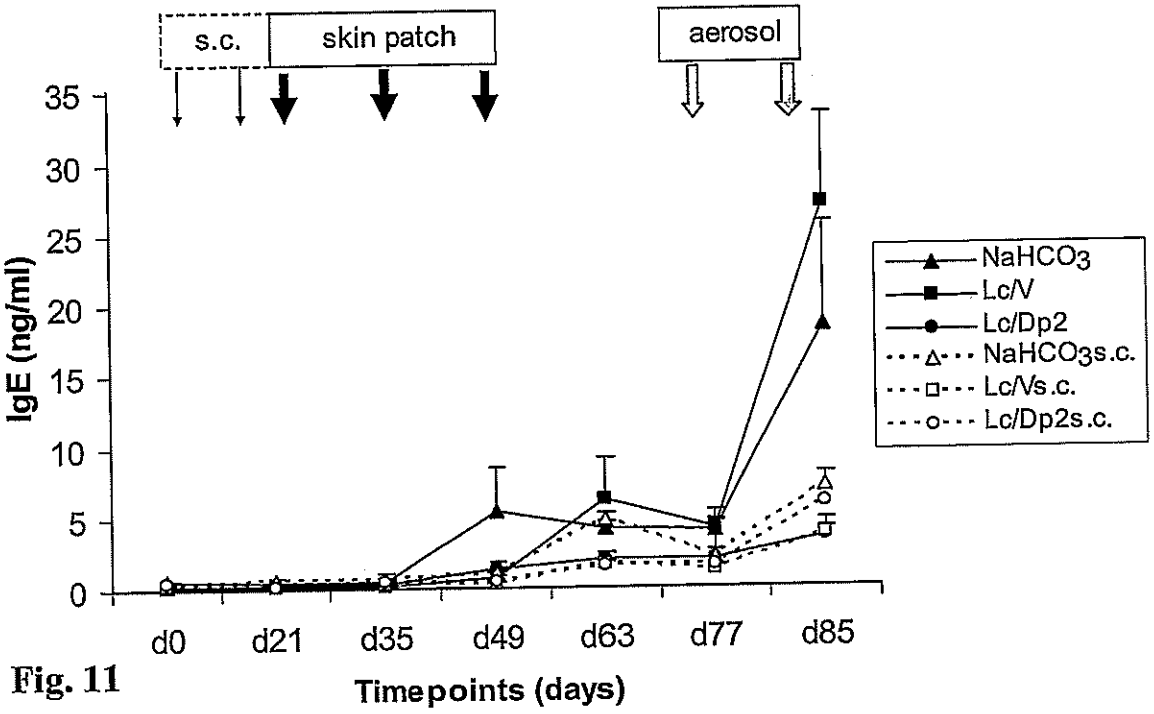


Fig. 11

Fig. 12A

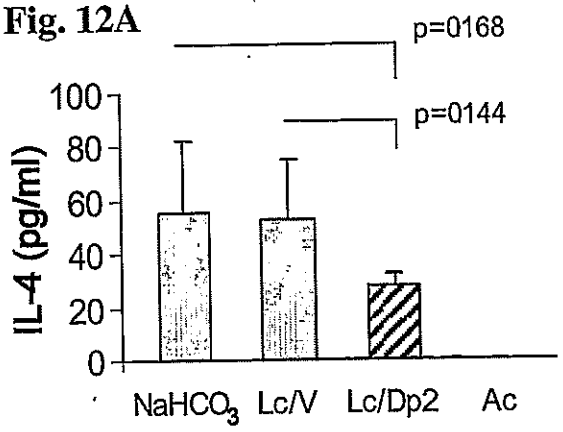


Fig. 12B

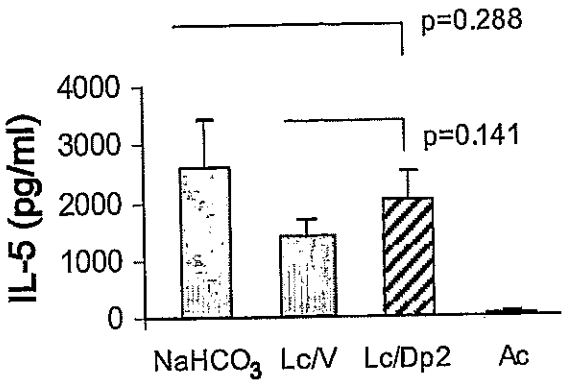


Fig. 12C

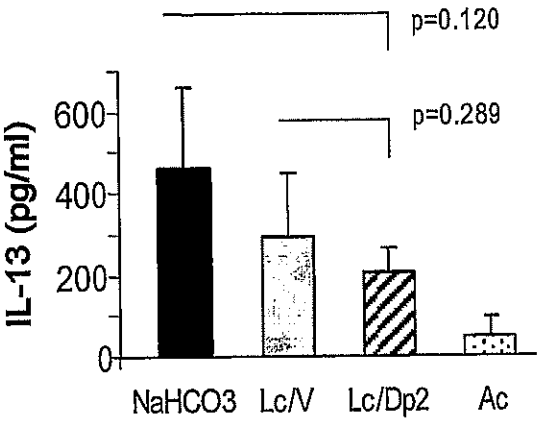


Fig. 12D

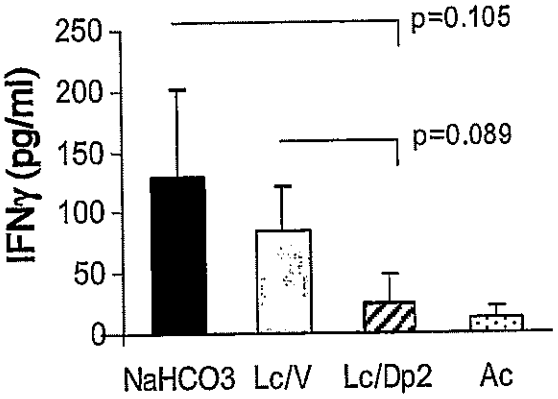


Fig. 12E

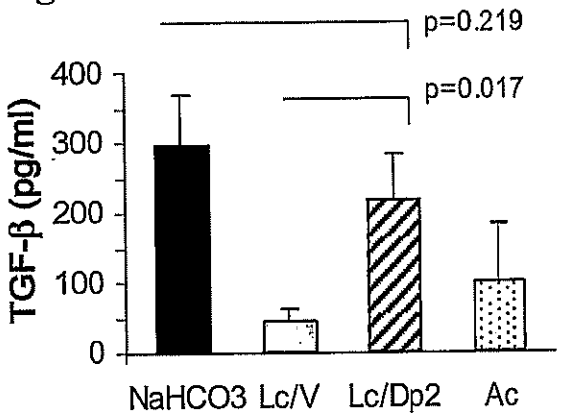


Fig. 12F

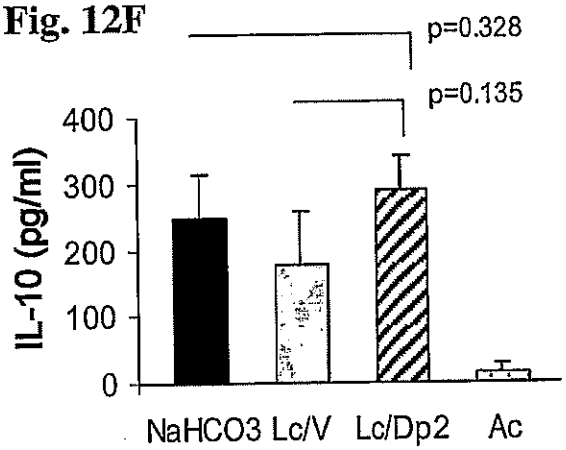


Fig. 13A

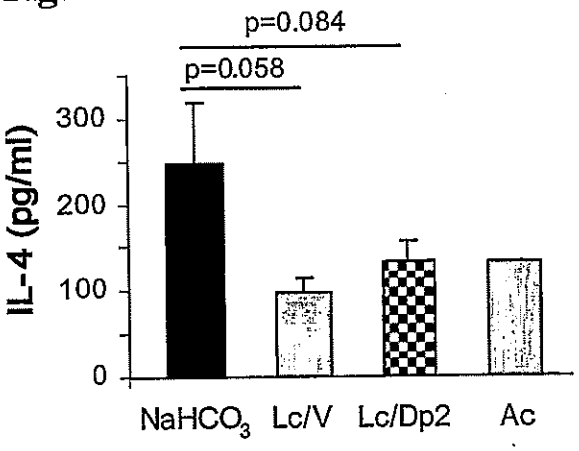


Fig. 13B

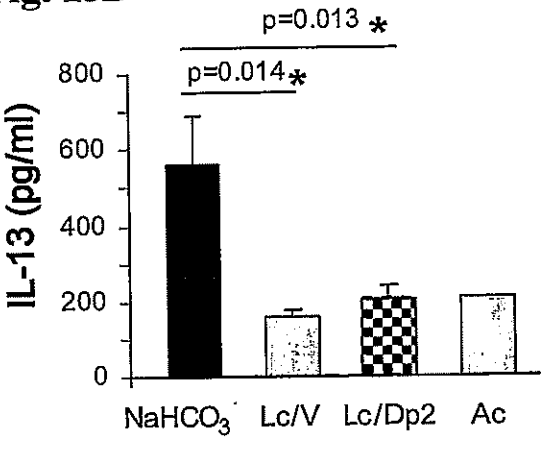


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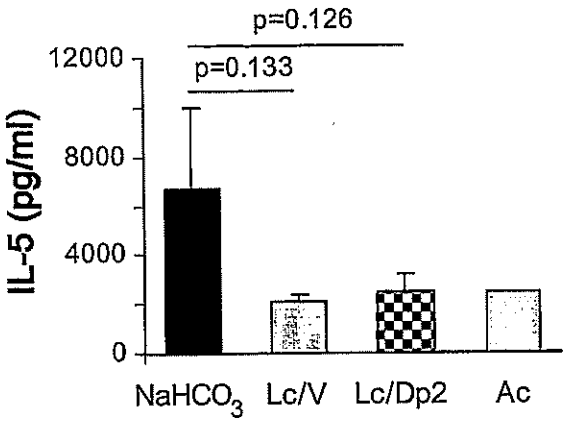


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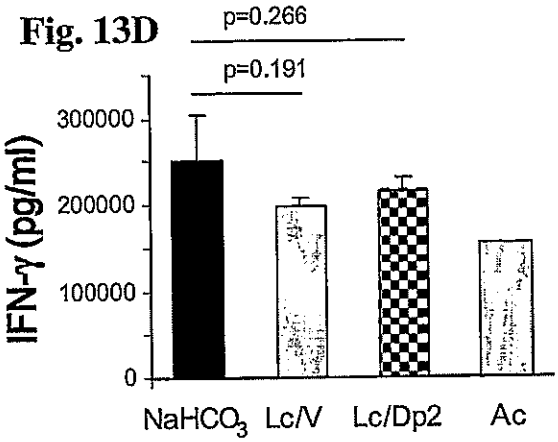


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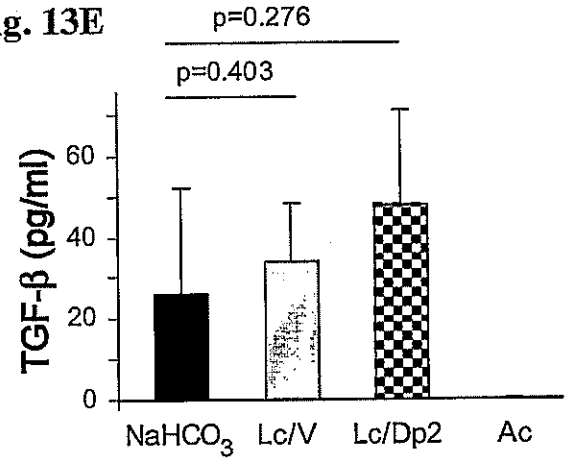


Fig. 14A

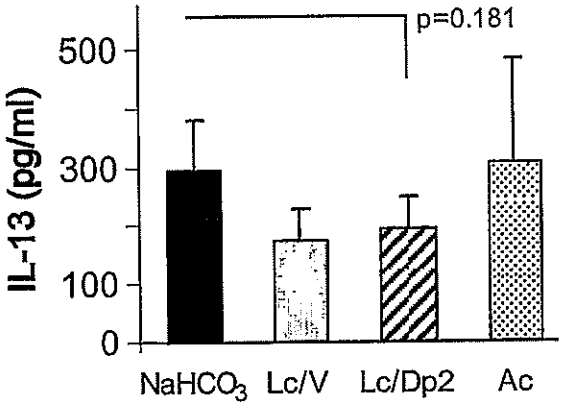


Fig. 14B

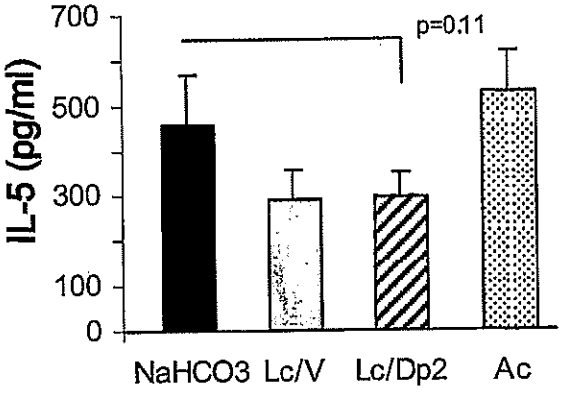


Fig. 14C

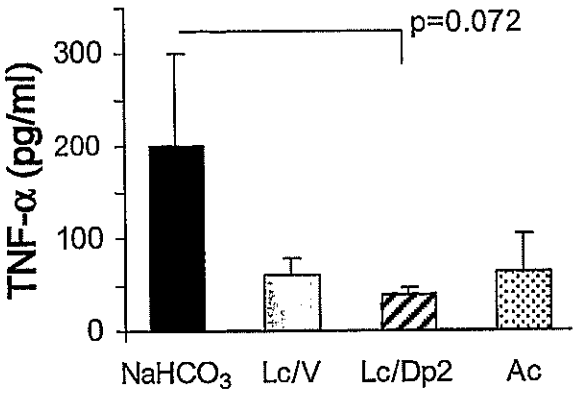


Fig. 14D

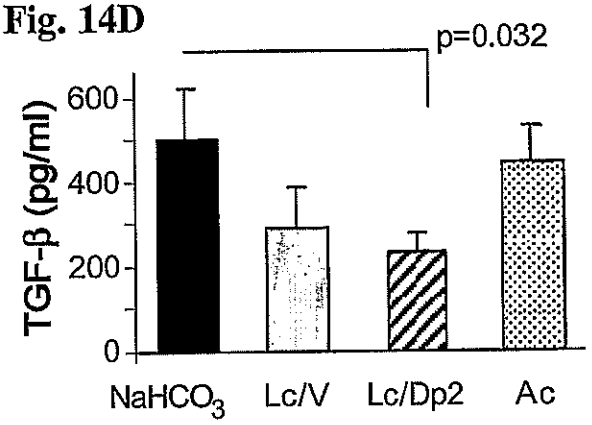


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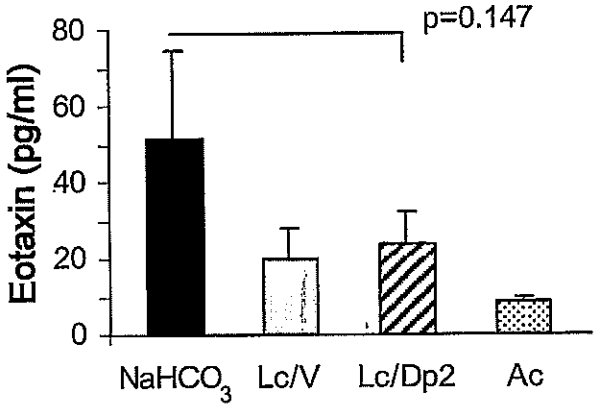


Fig. 15A

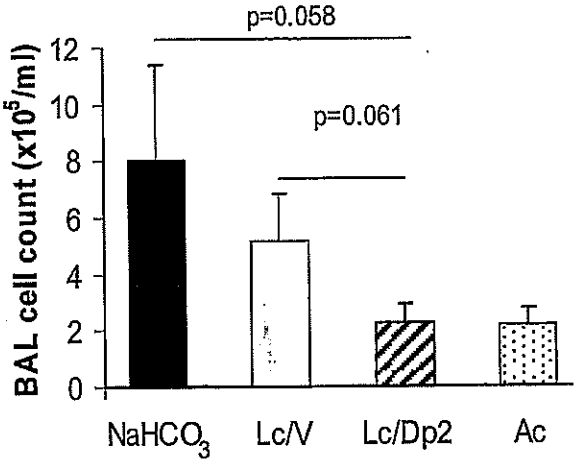
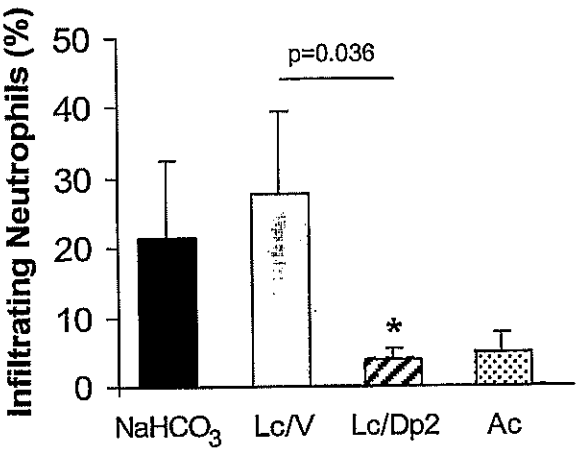


Fig. 15B



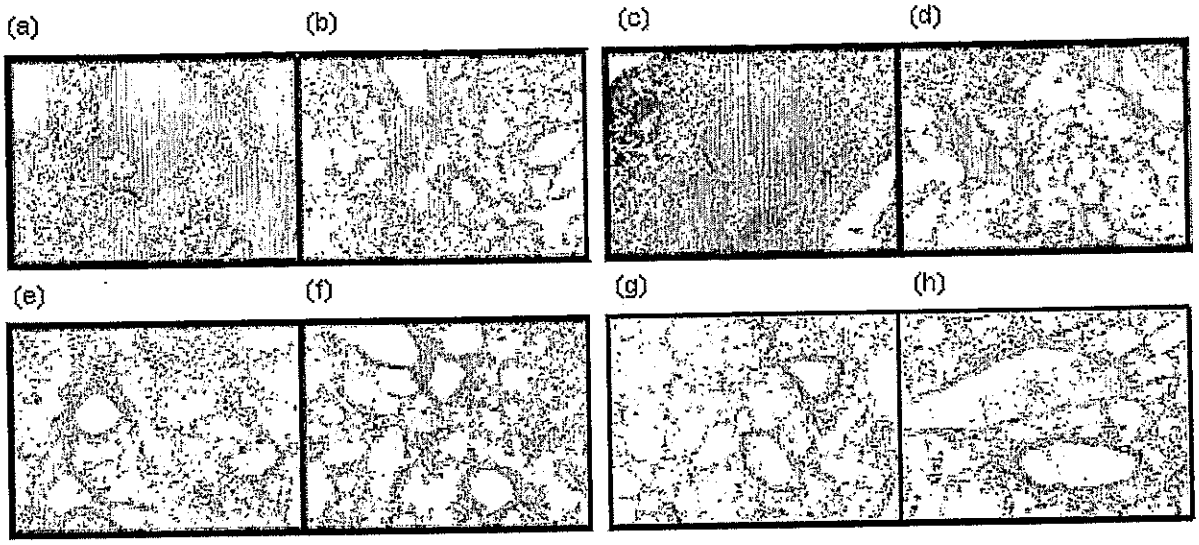


Fig. 15C

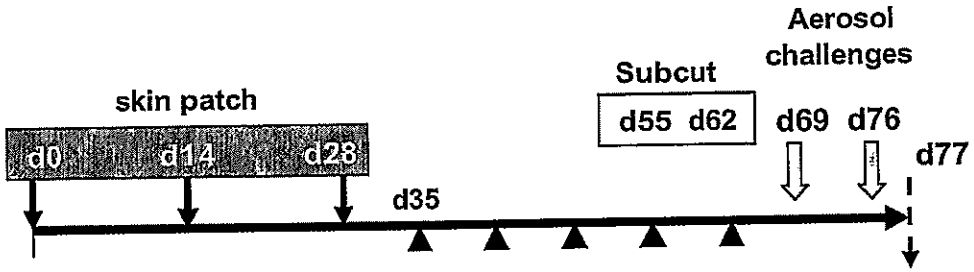


Fig. 16

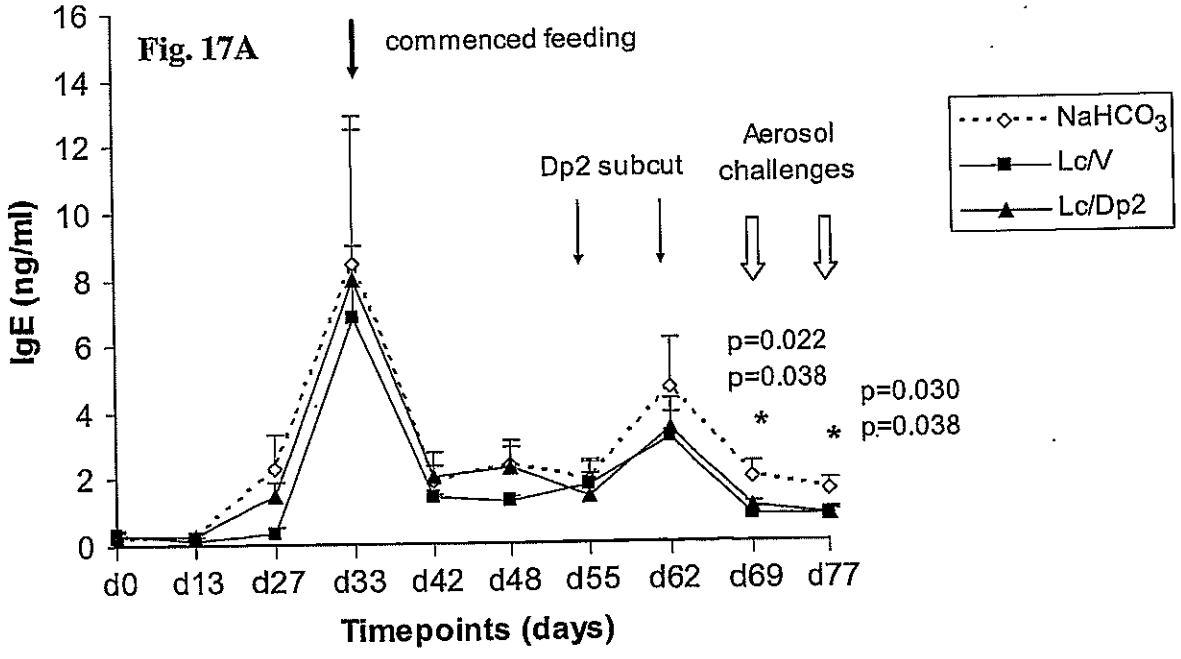


Fig. 17B

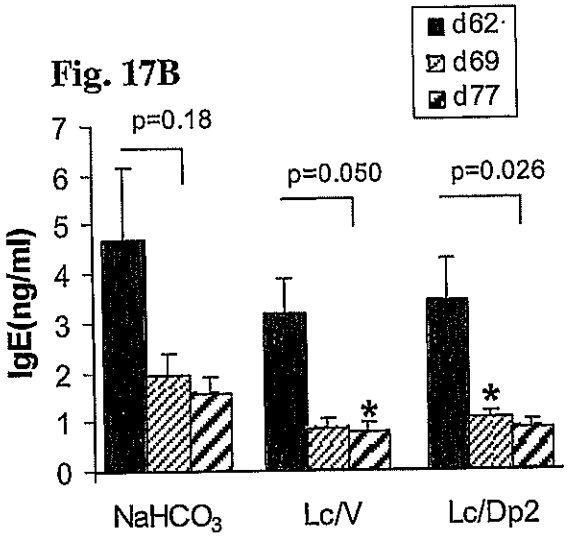


Fig. 17D

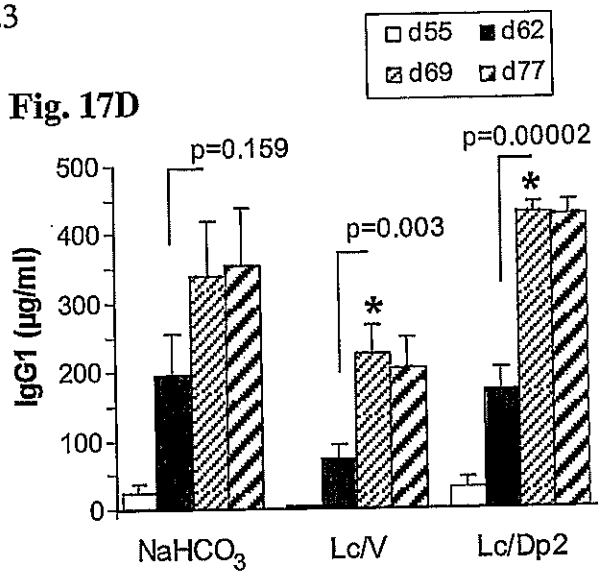


Fig. 17C

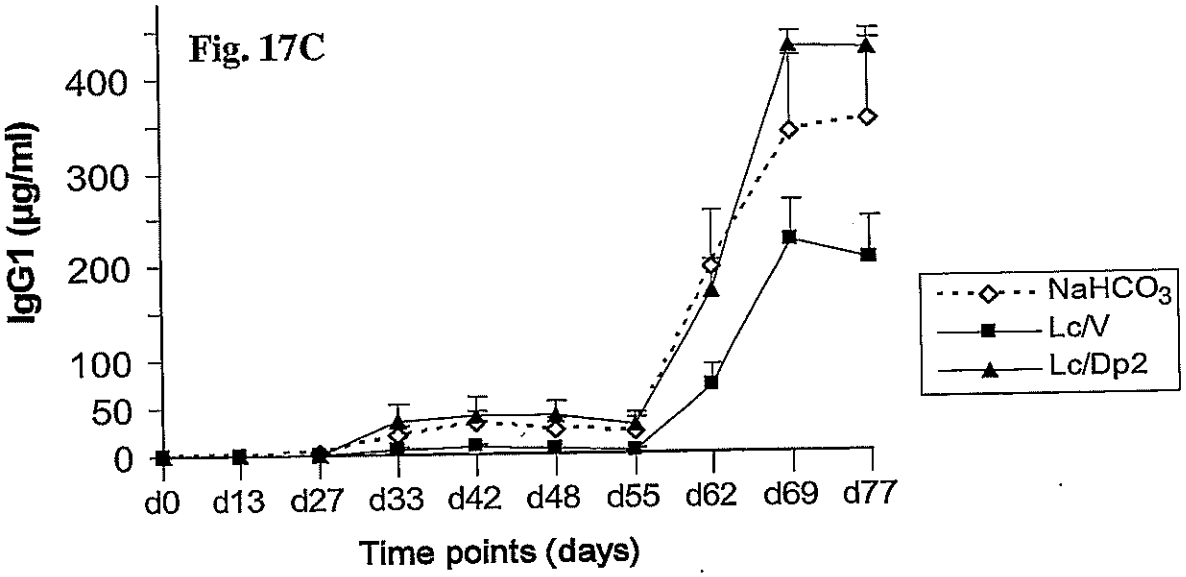


Fig. 18A

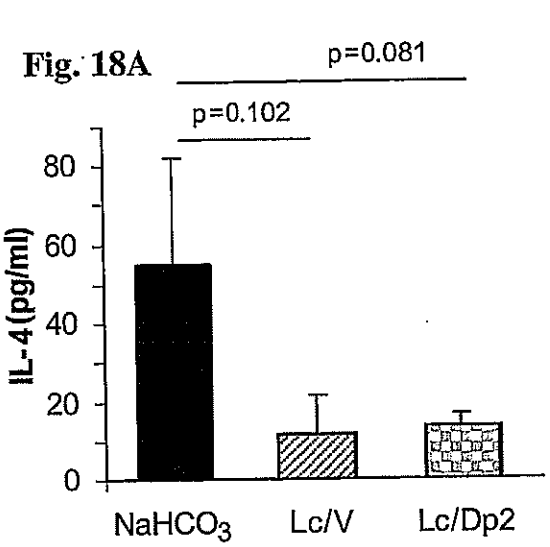


Fig. 18B

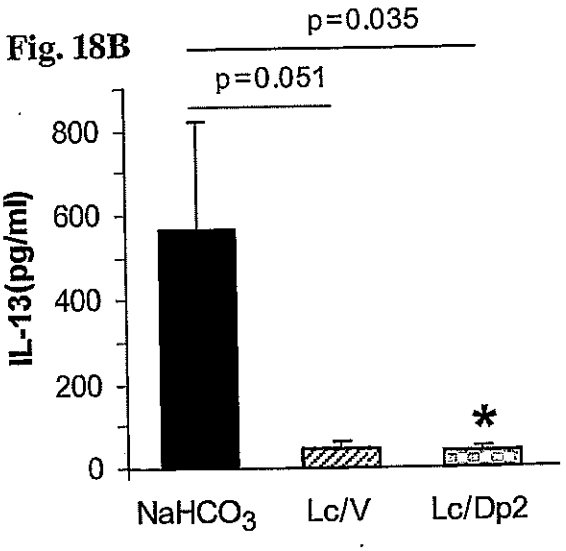


Fig. 18C

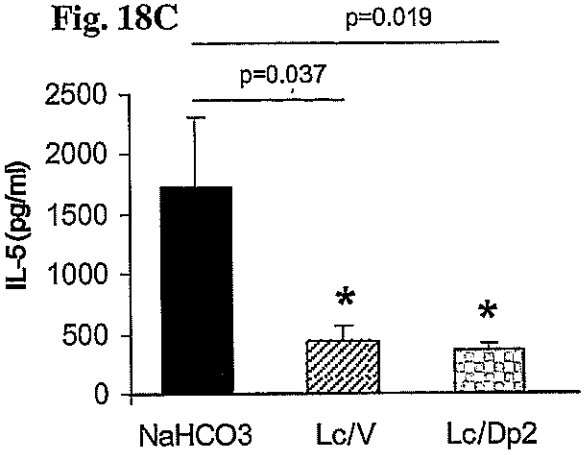


Fig. 18D

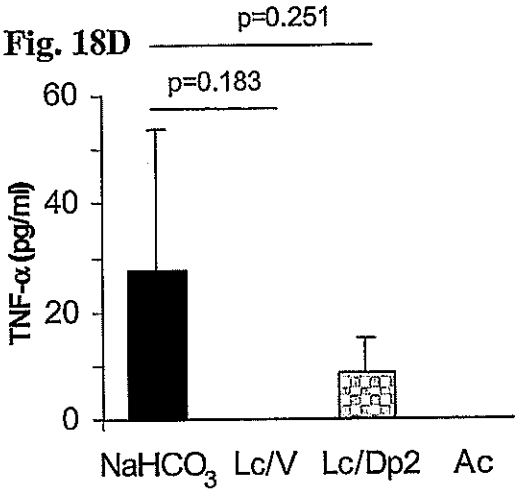


Fig. 18E

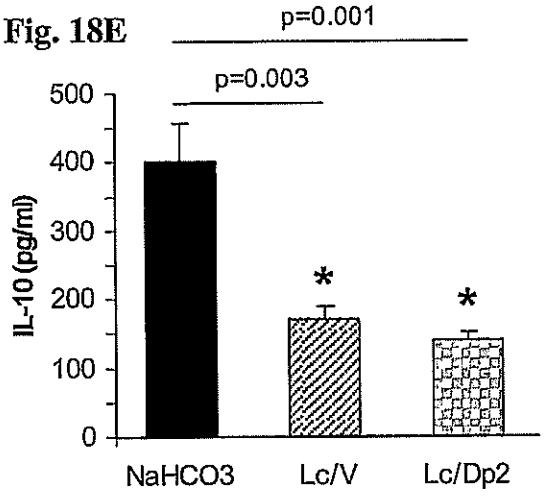


Fig. 18F

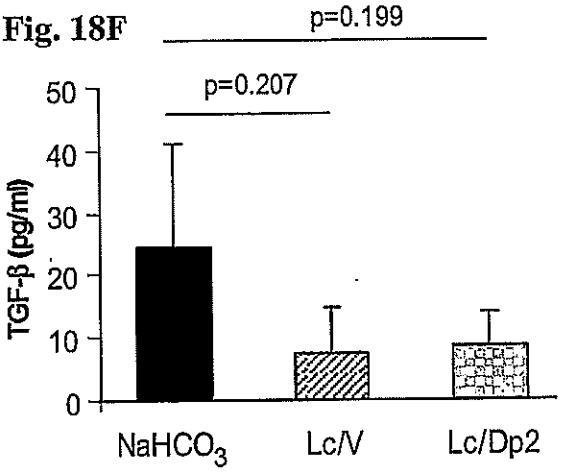


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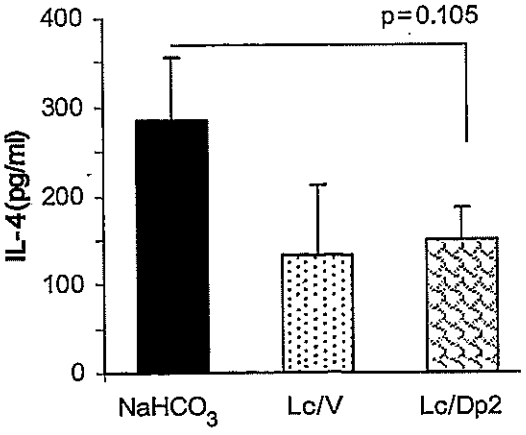


Fig. 19B

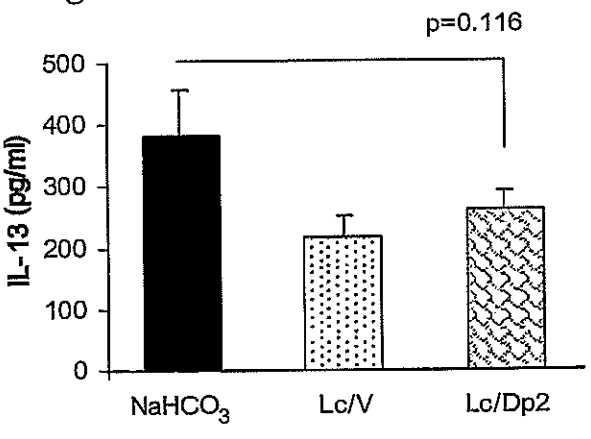


Fig. 19C

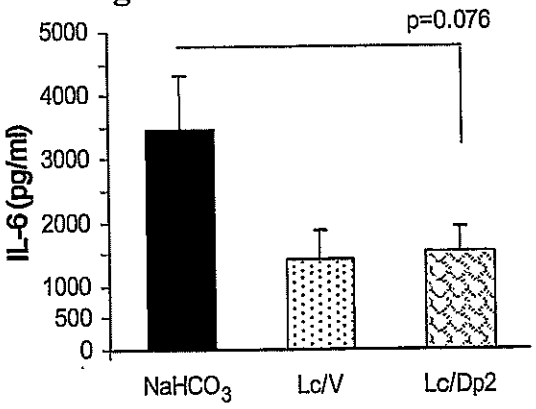


Fig. 19D

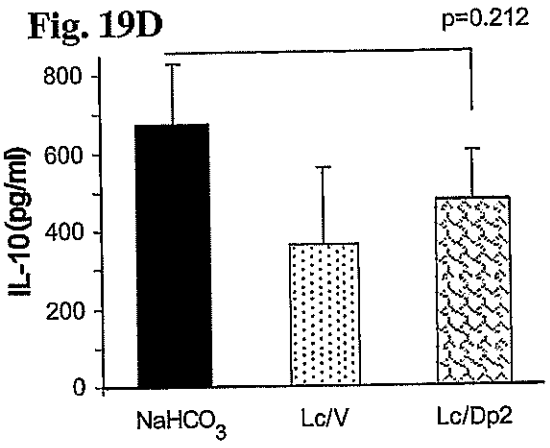


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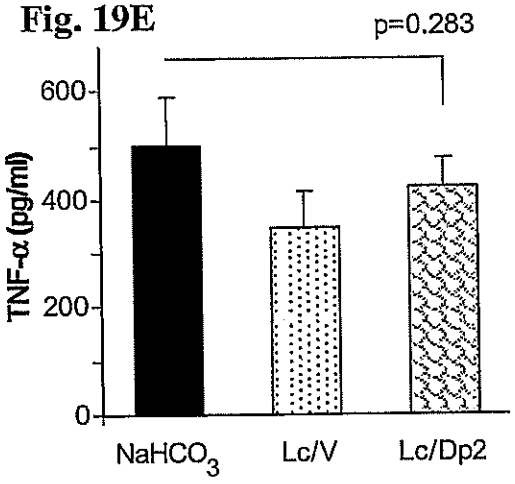


Fig. 19F

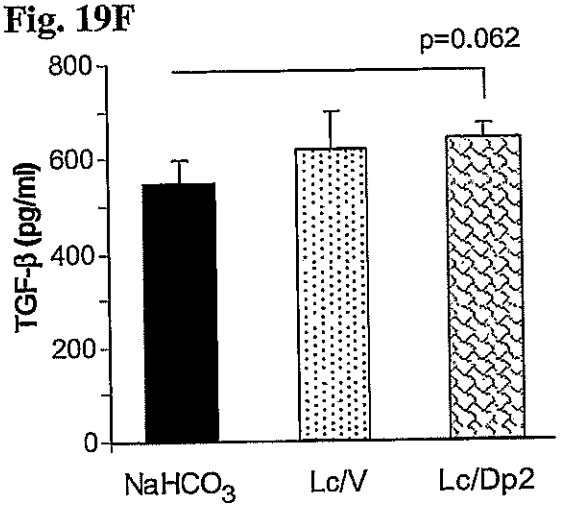


Fig. 20A

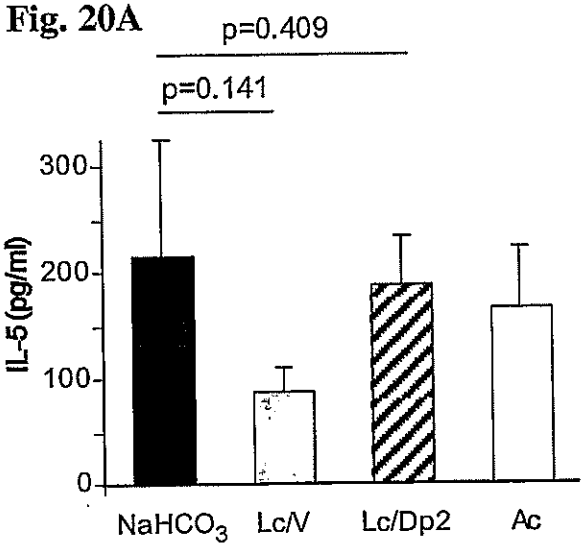


Fig. 20B

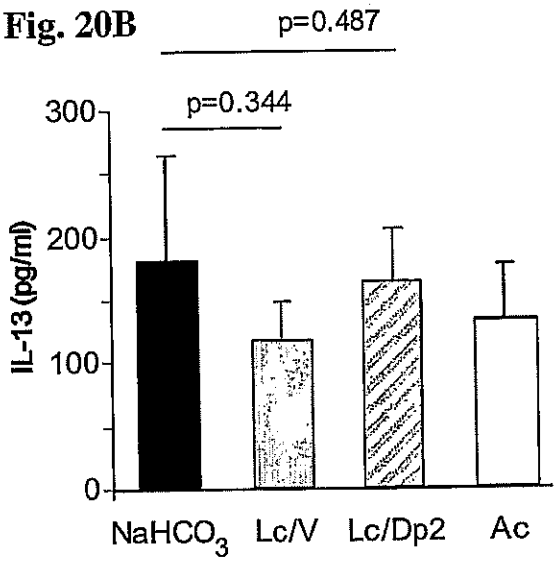


Fig. 20C

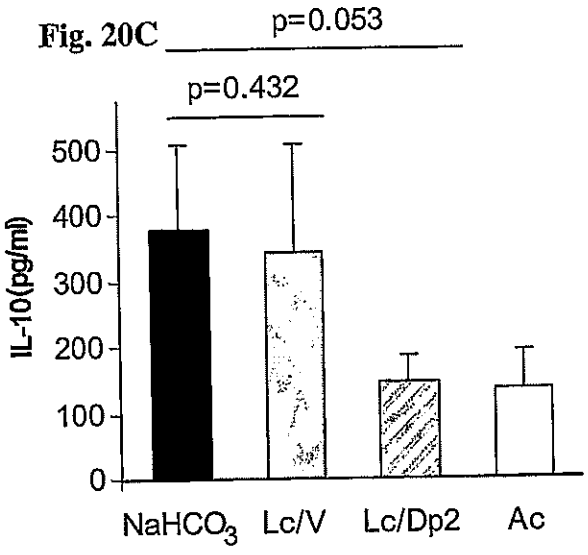


Fig. 20D

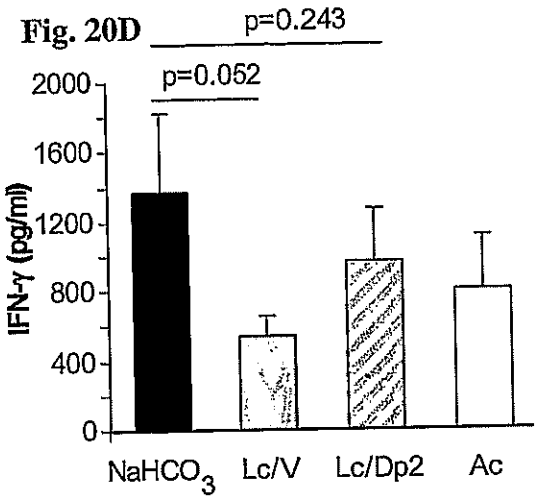


Fig. 20E

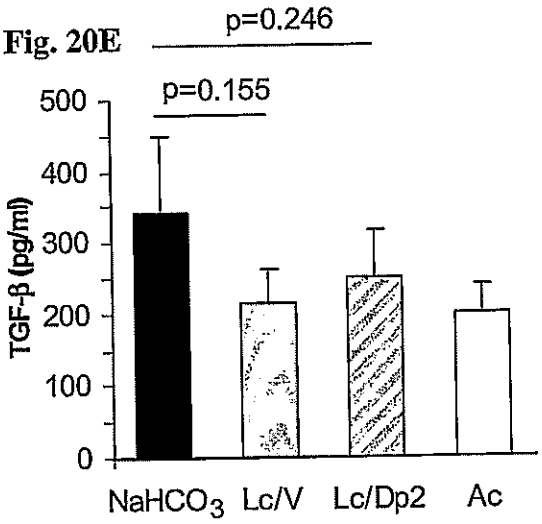


Fig. 20F

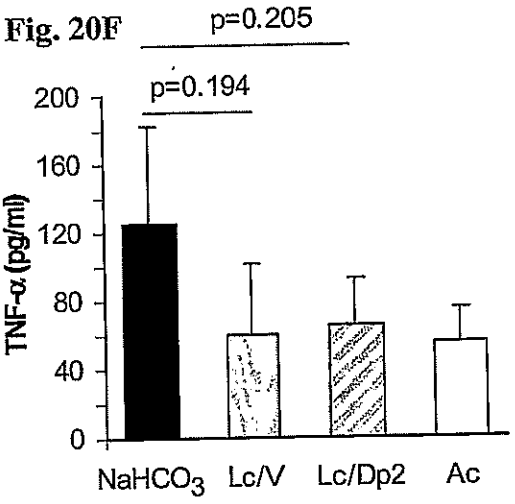


Fig. 20G

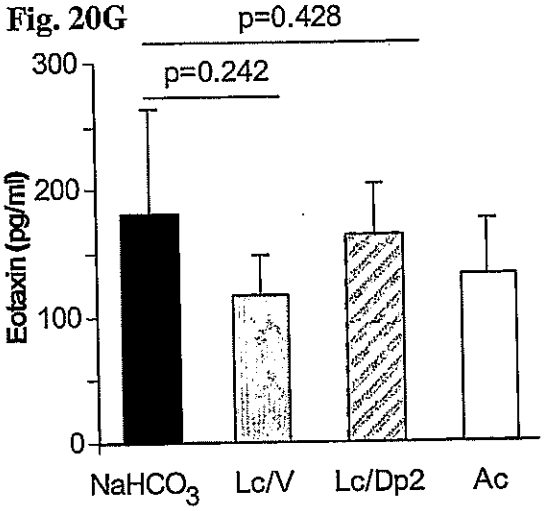


Fig. 21A

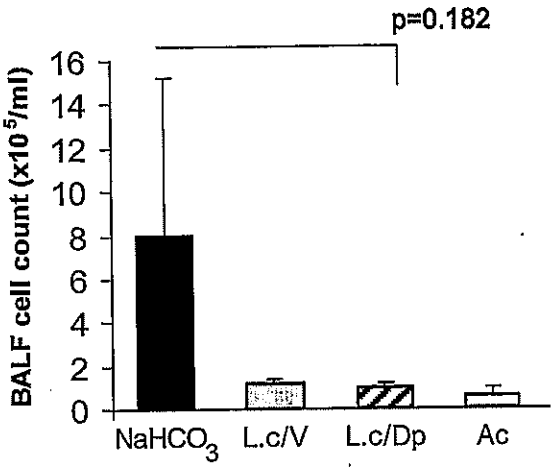


Fig. 21B

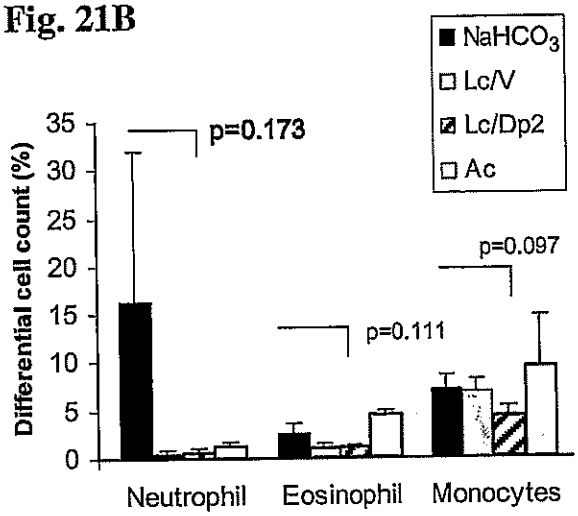


Fig. 21C

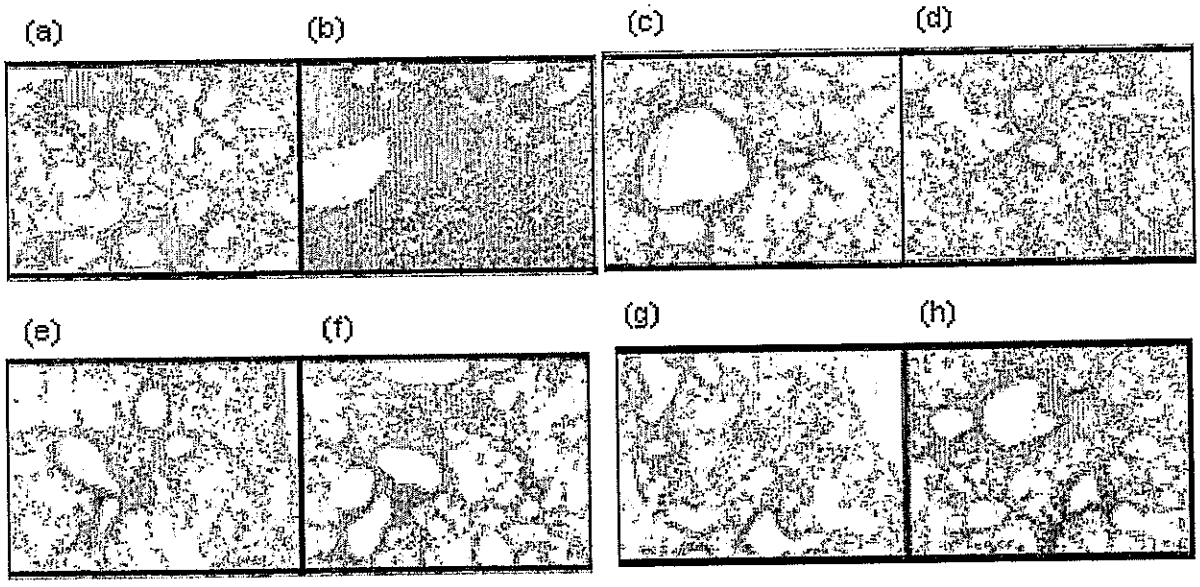


Fig. 22

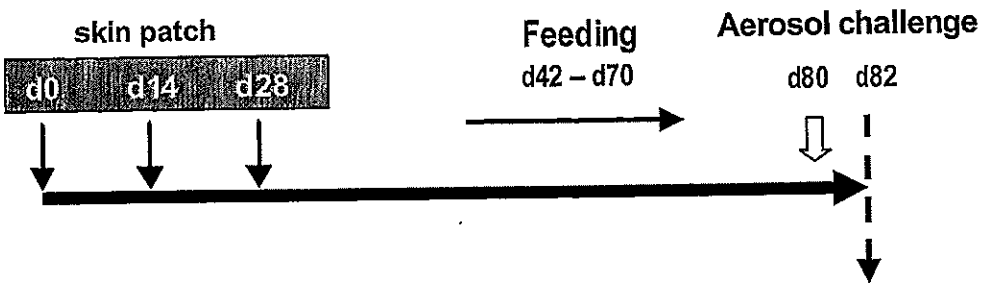


Fig. 23A

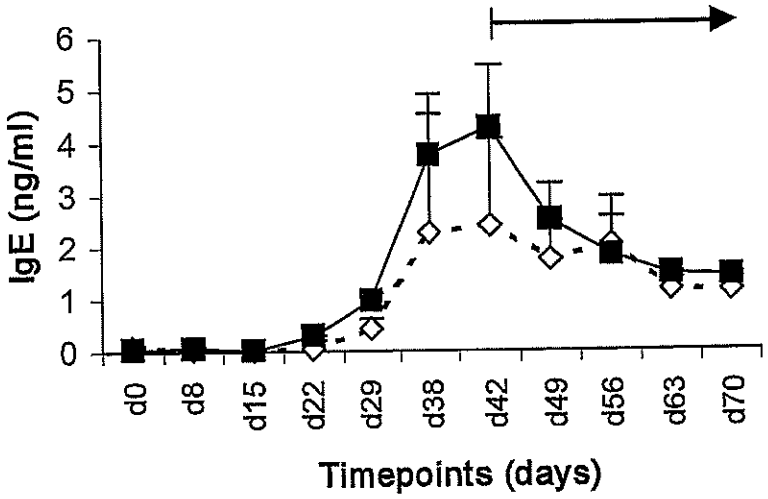


Fig. 23B

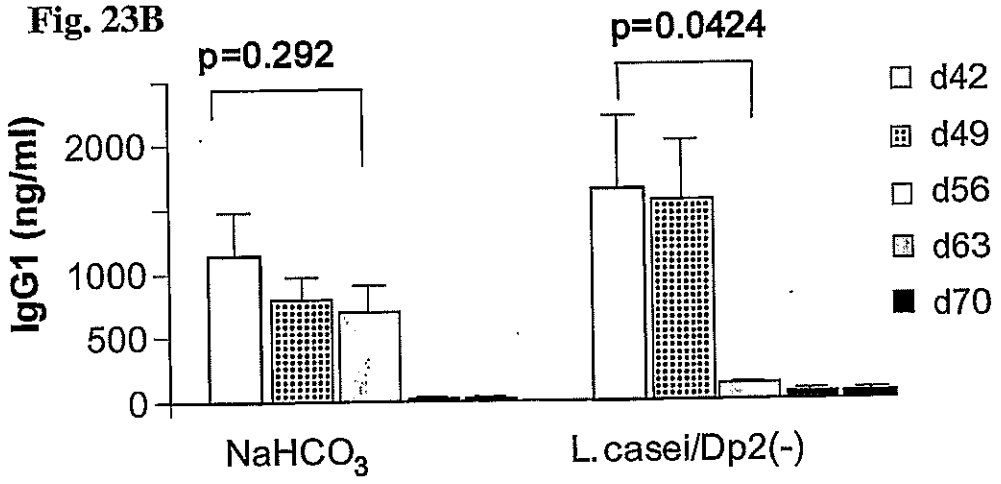
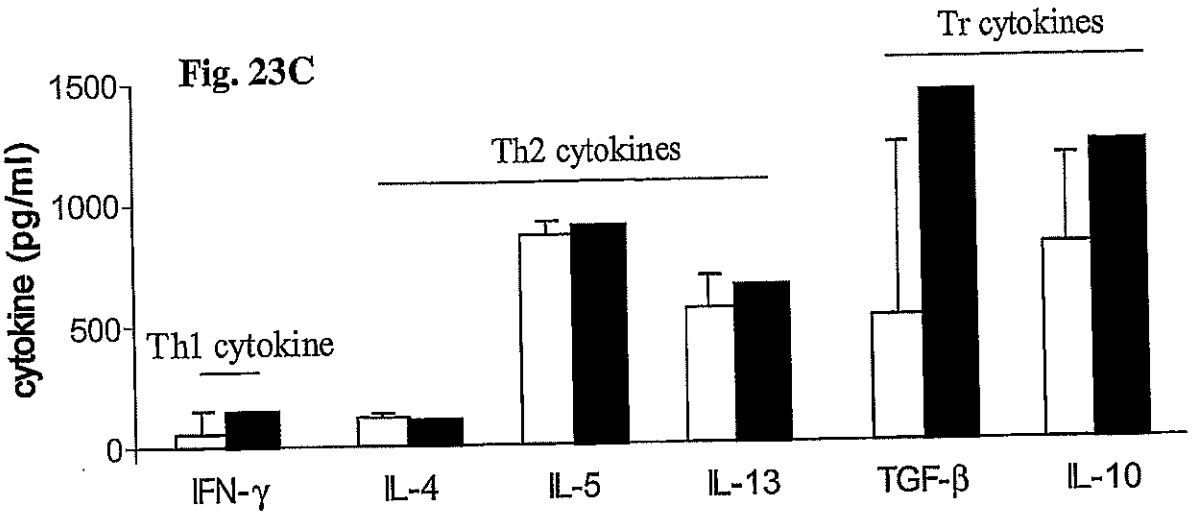


Fig. 23C



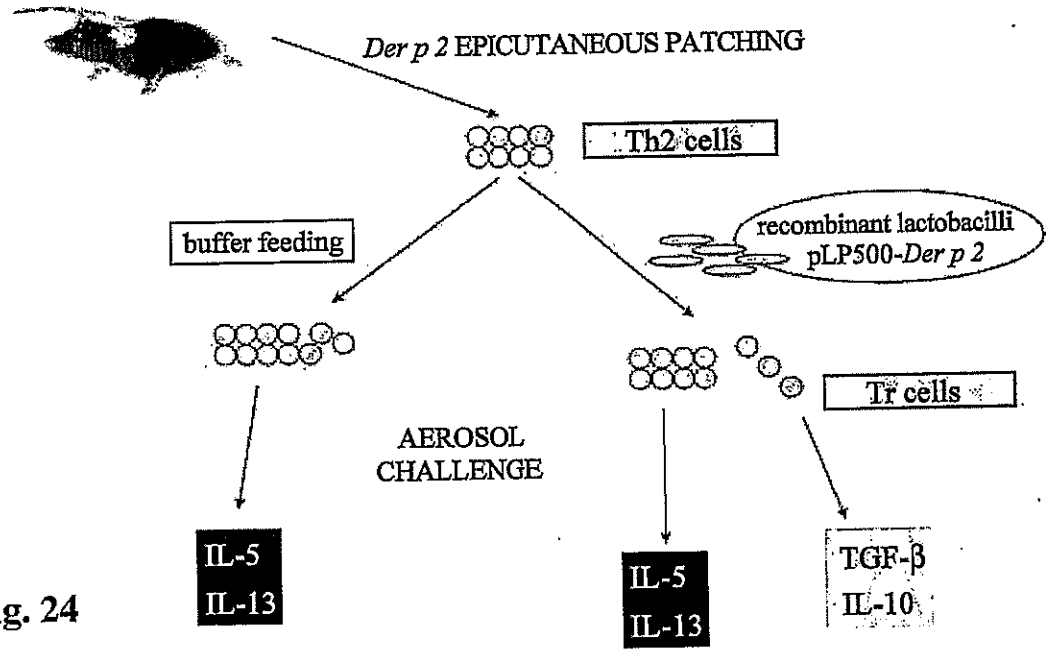


Fig. 24

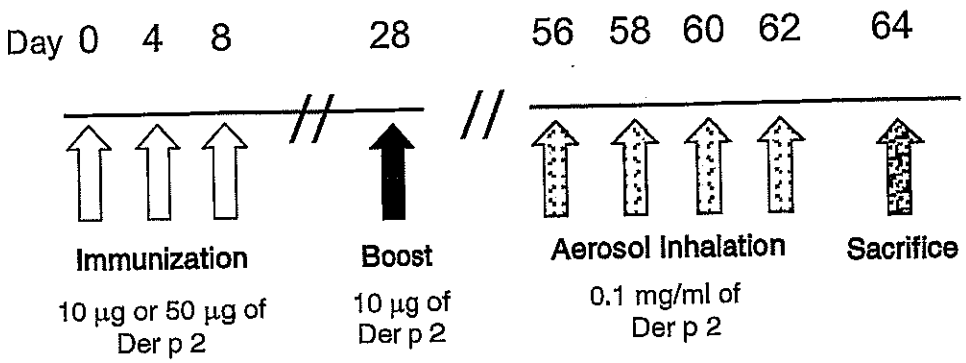
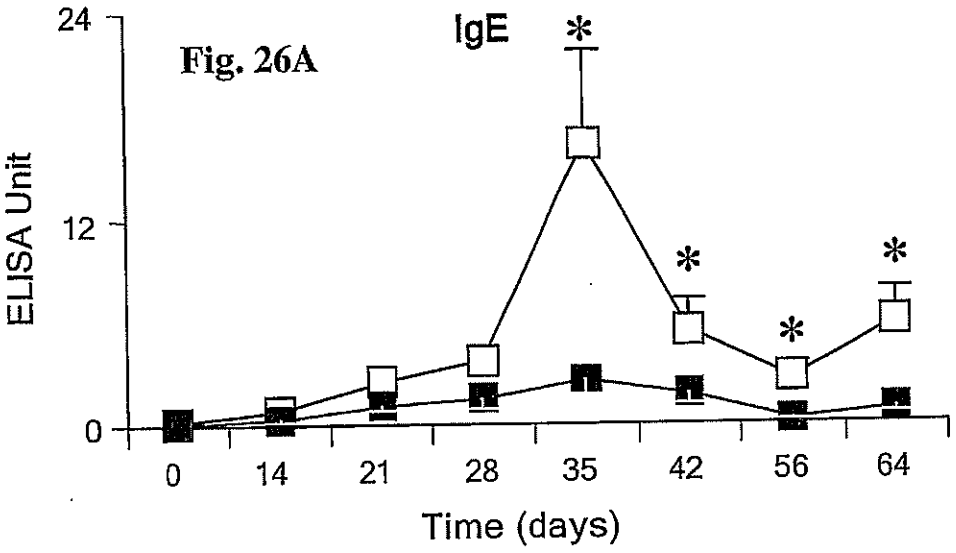
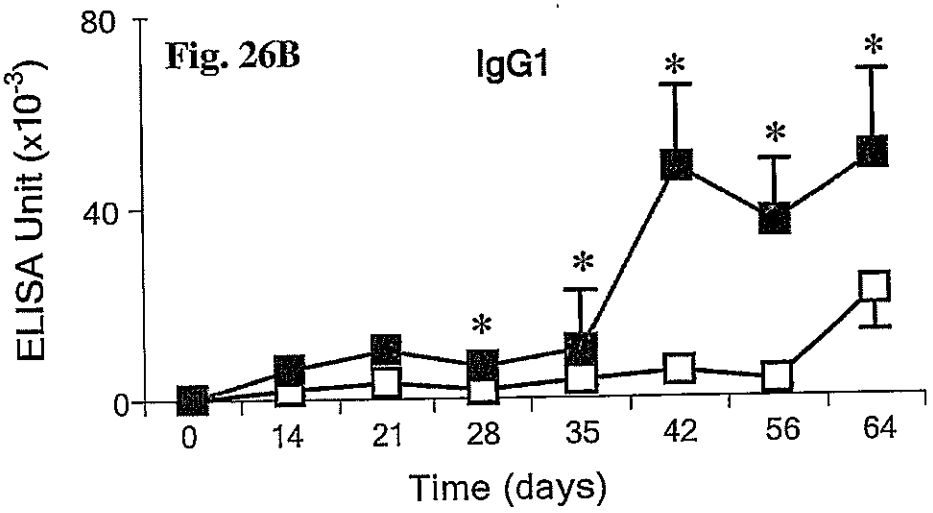


Fig. 25


Fig. 26A
IgE
ELISA Unit
24
12
0
0
14
21
28
35
42
56
64
Time (days)


Fig. 26B
IgG1
ELISA Unit (x10-3)
80
40
0
0
14
21
28
35
42
56
64
Time (days)

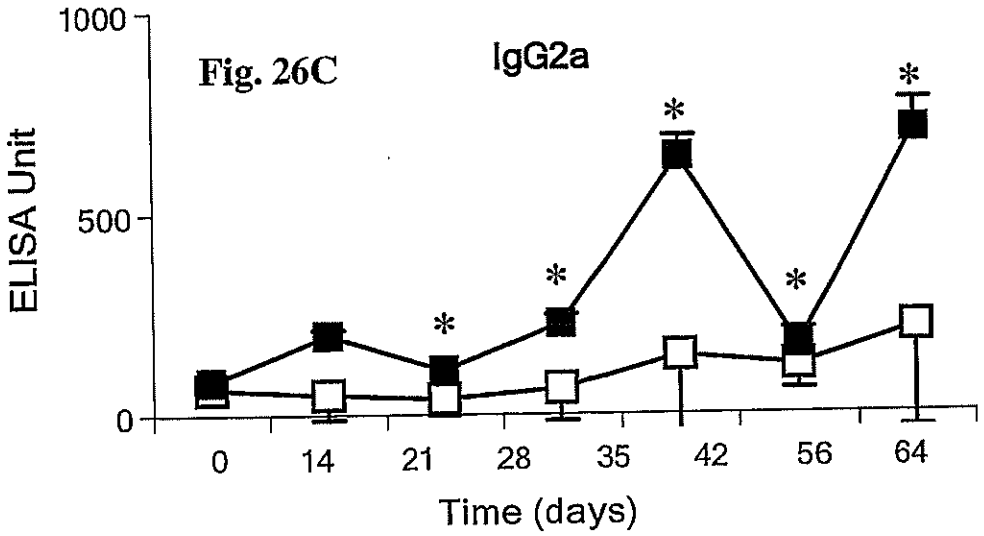

Fig. 26C
IgG2a
ELISA Unit
1000
500
0
0
14
21
28
35
42
56
64
Time (days)

Fig. 27

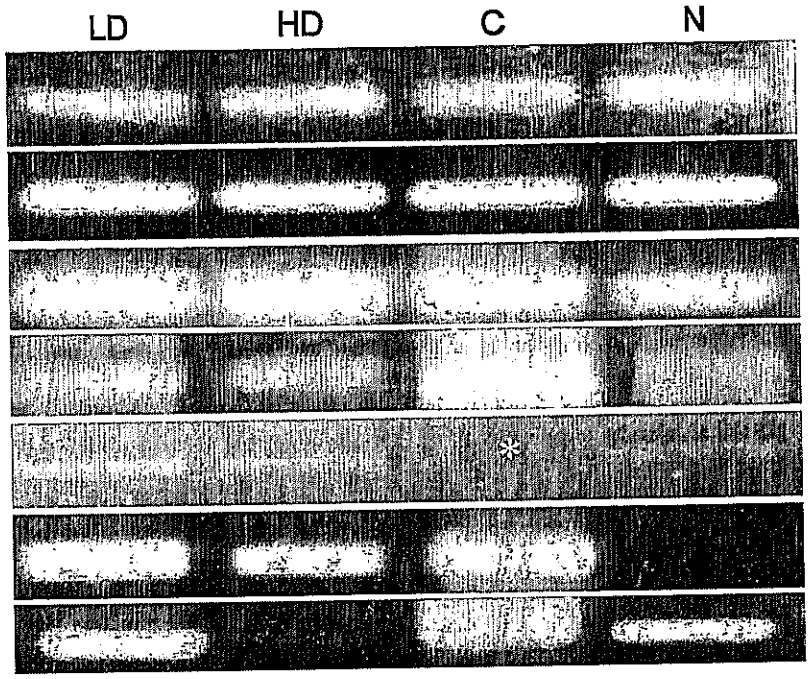


Fig. 28A

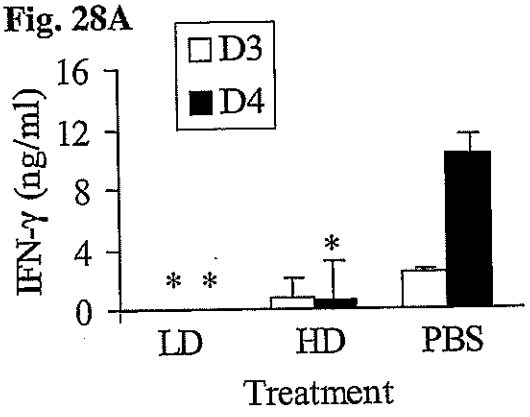


Fig. 28B

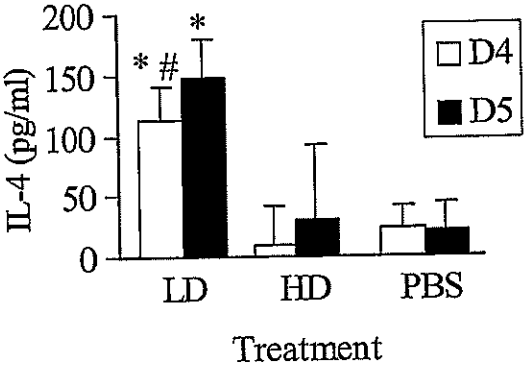


Fig. 28C

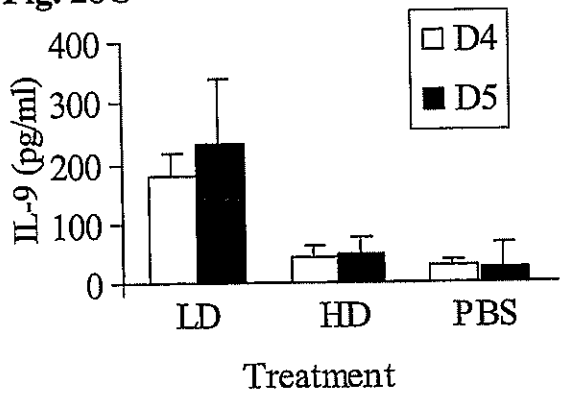


Fig. 28D

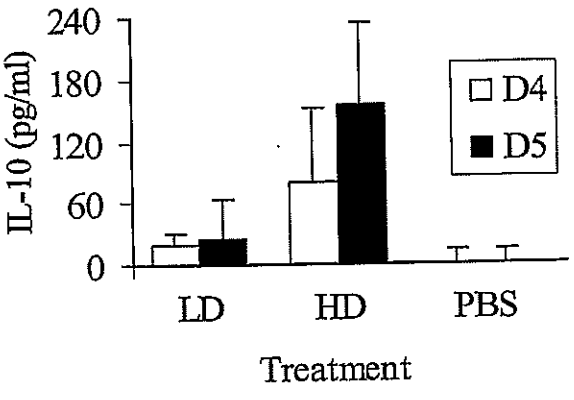


Fig. 28E

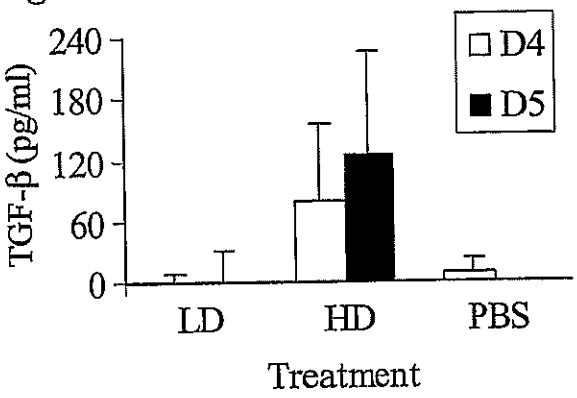


Fig. 29A

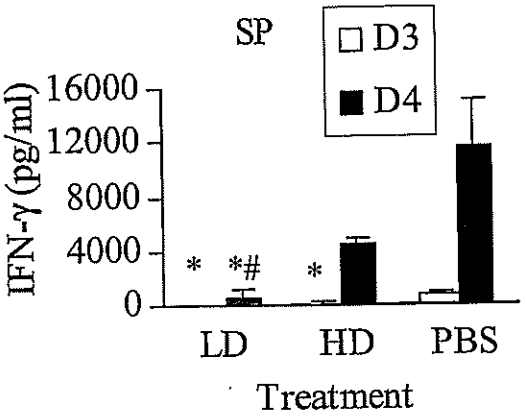


Fig. 29B

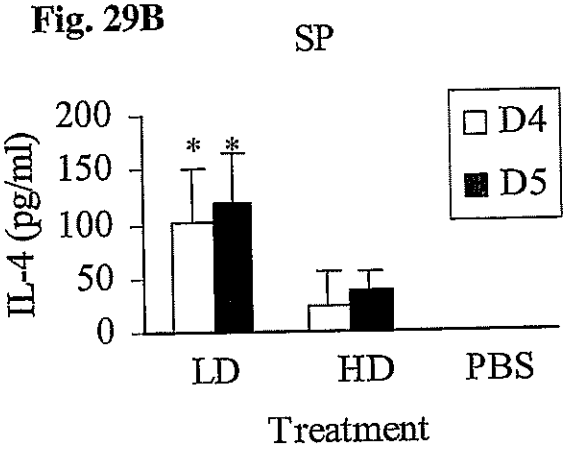


Fig. 29C

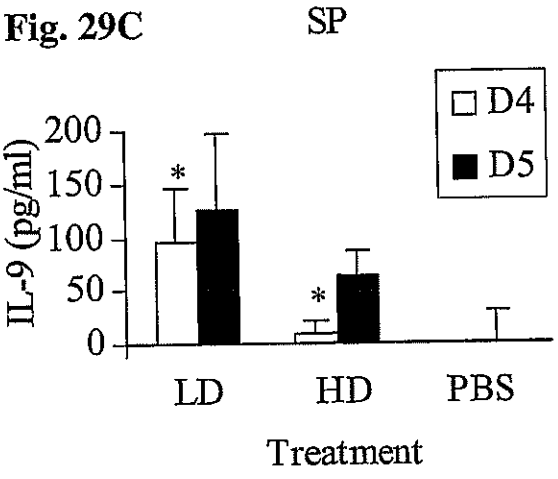
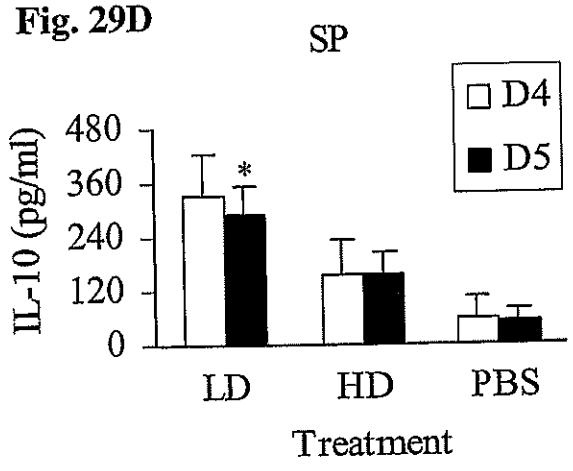


Fig. 29D



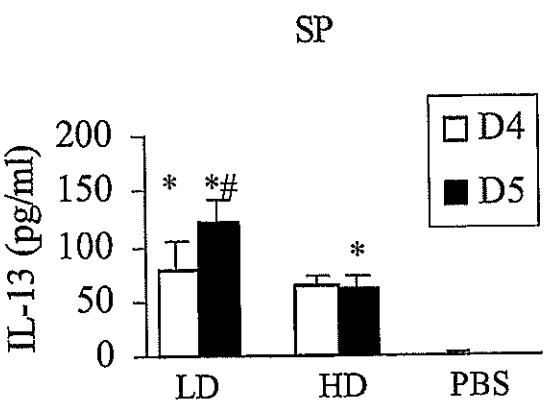


Fig. 29E

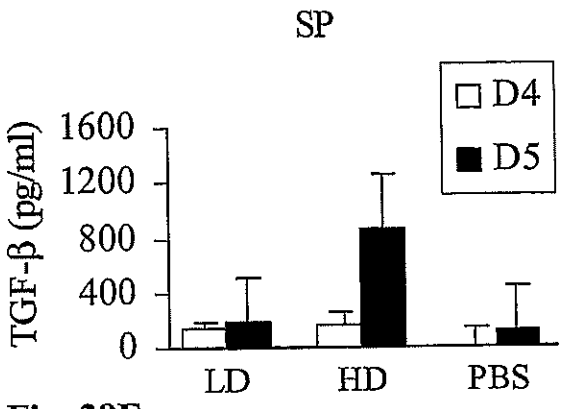


Fig. 29F

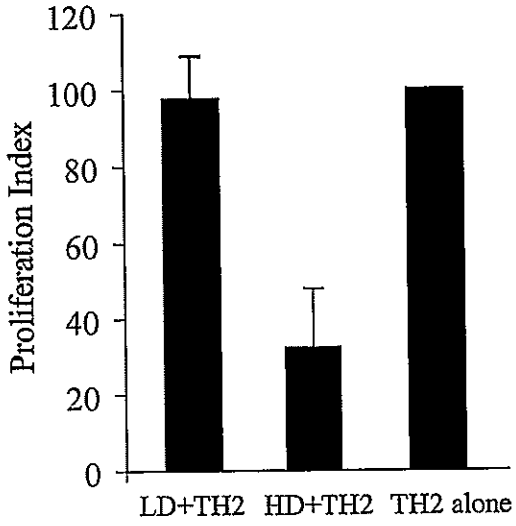


Fig. 30A

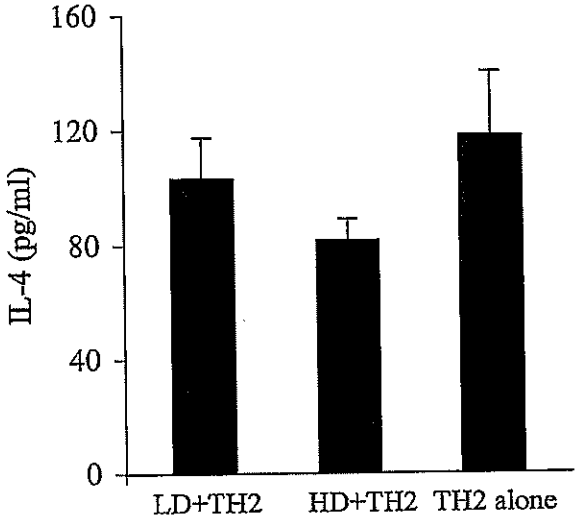


Fig. 30B

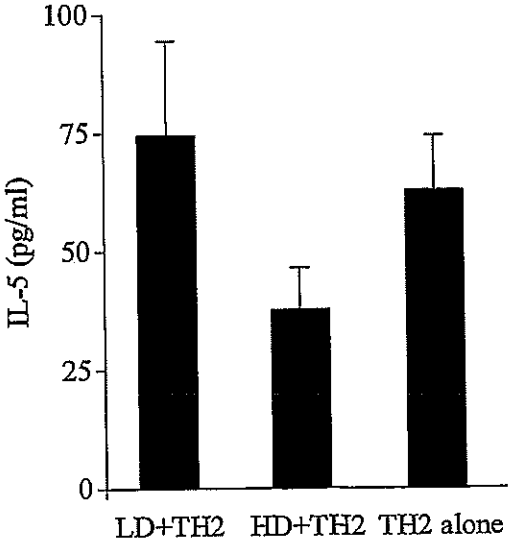


Fig. 30C

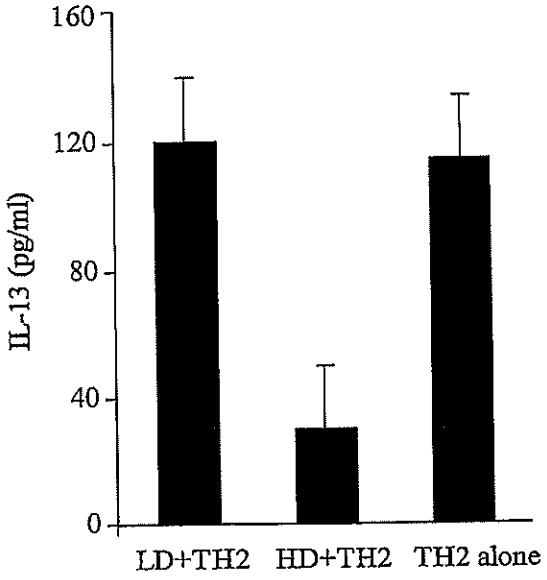


Fig. 30D

Fig. 31

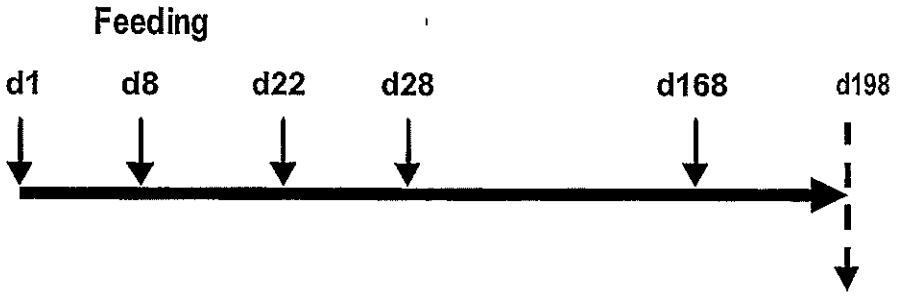
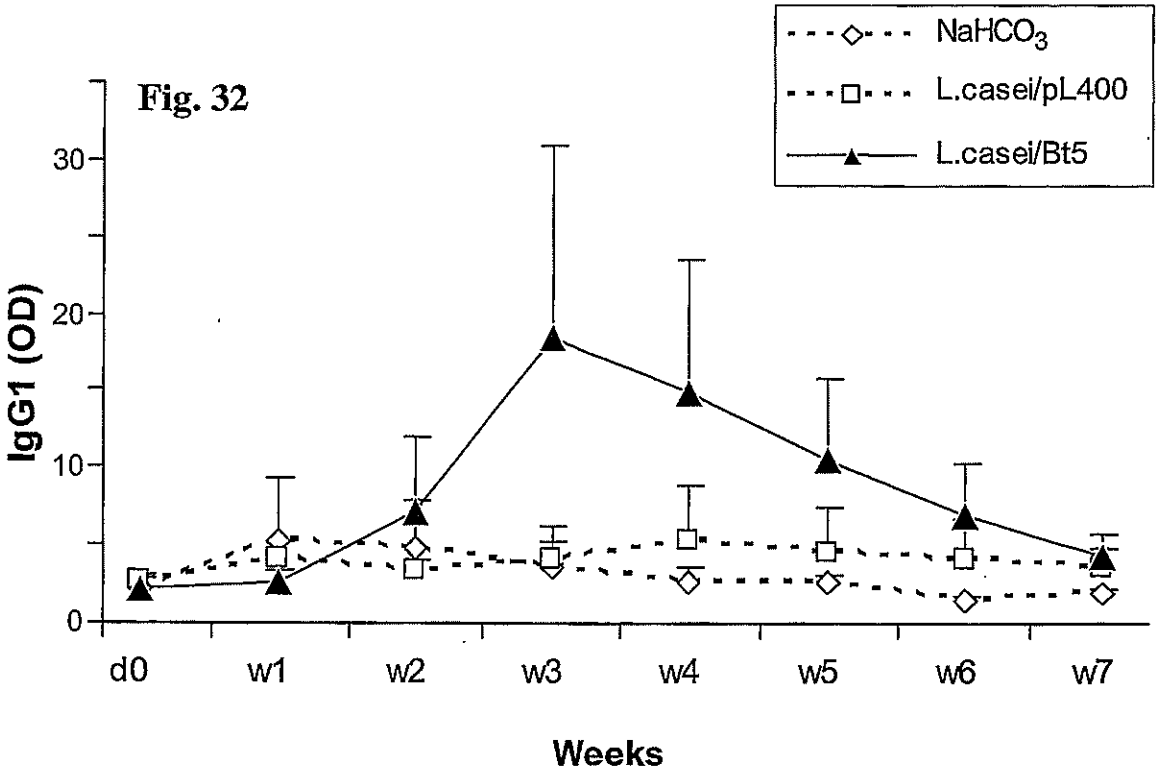

Feeding
d1
d8
d22
d28
d168
d198

Fig. 32


NaHCO3
L.casei/pL400
L.casei/Bt5
IgG1 (OD)
30
20
10
0
d0
w1
w2
w3
w4
w5
w6
w7
Weeks

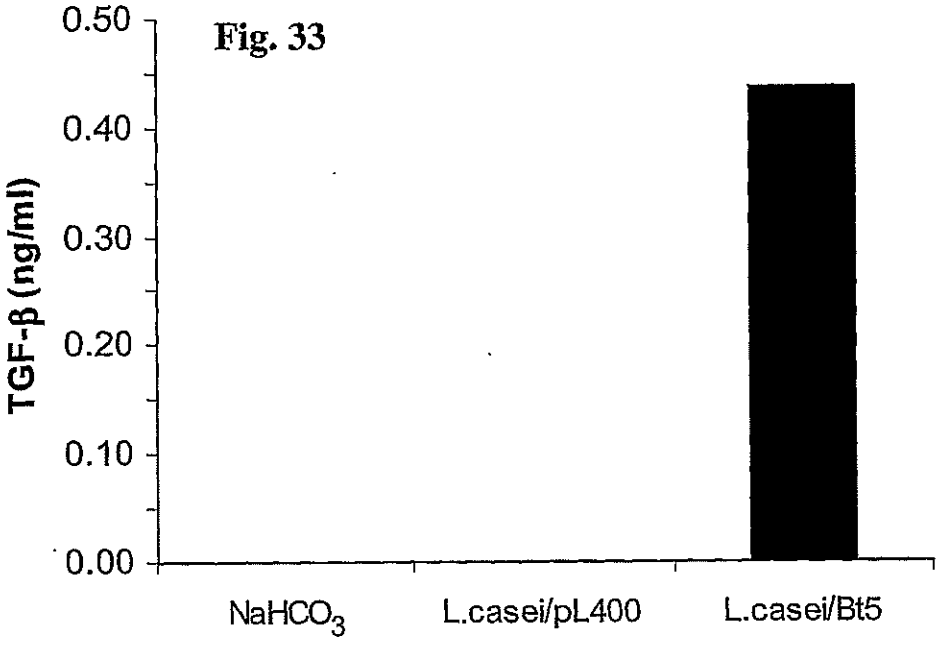


Fig. 34 Sequence of Blo t 5 in PLP400

```
GGATCCACAA GAG CAC AAG CCA AAG AAG GAT GAT TTC CGA AAC GAA TTC GAT
 BamHI   Q   E   H   K   P   K   K   D   D   F   R   N   E   F   D

CAC TTG TTG ATC GAA CAG GCA AAC CAT GCT ATC GAA AAG GGA GAA CAT CAA
 H   L   L   I   E   Q   A   N   H   A   I   E   K   G   E   H   Q

TTG CTT TAC TTG CAA CAC CAA CTC GAC GAA TTG AAT GAA AAC AAG AGC AAG
 L   L   Y   L   Q   H   Q   L   D   E   L   N   E   N   K   S   K

GAA TTG CAA GAG AAA ATC ATT CGA GAA CTT GAT GTT GTT TGC GCC ATG ATC
 E   L   Q   E   K   I   I   R   E   L   D   V   V   C   A   M   I

GAA GGA GCC CAA GGA GCT TTG GAA CGT GAA TTG AAG CGA ACT GAT CTT AAC
 E   G   A   Q   G   A   L   E   R   E   L   K   R   T   D   L   N

ATT TTG GAA CGA TTC AAC TAC GAA GAG GCT CAA ACT CTC AGC AAG ATC TTG
 I   L   E   R   F   N   Y   E   E   A   Q   T   L   S   K   I   L

CTT AAG GAT TTG AAG GAA ACC GAA CAA AAA GTG AAG GAT ATT CAA ACC
 L   K   D   L   K   E   T   E   Q   K   V   K   D   I   Q   T

CAA CTC GAG -Tbch
 Q   Xho I
```

Fig. 35 Der P 2 gene in PLP500, with anchor

```
GGATCC A GAT CAA GTC GAT GTC AAA GAT TGT GCC AAT CAT GAA
BamHI    D   Q   V   D   V   K   D   C   A   N   H   E

ATC AAA AAA GTT TTG GTA CCA GGA TGC CAT GGT TCA GAA CCA
 I   K   K   V   L   V   P   G   C   H   G   S   E   P

TGT ATC ATT CAT CGT GGT AAA CCA TTC CAA TTG GAA GCC GTT
 C   I   I   H   R   G   K   P   F   Q   L   E   A   V

TTC GAA GCC AAC CAA AAC ACA AAA ACC GCT AAA ATT GAA ATC
 F   E   A   N   Q   N   T   K   T   A   K   I   E   I

AAA GCC TCA ATC GAT GGT TTA GAA GTT GAT GTT CCC CGT ATC
 K   A   S   I   D   G   L   E   V   D   V   P   G   I

GAT CCA AAT GCA TGC CAT TAC ATG AAA TGC CCA TTG GTT AAA
 D   P   N   A   C   H   Y   M   K   C   P   L   V   K

GGA CAA CAA TAT GAT ATT AAA TAT ACA TGG AAT GTT CCG AAA
 G   Q   Q   Y   D   I   K   Y   T   W   N   V   P   K

ATT GCA CCA AAA TCT GAA AAT GTT GTC GTC ACT GTT AAA GTT
 I   A   P   K   S   E   N   V   V   V   T   V   K   V

ATG GGT GAT GAT GGT GTT TTG GCC TGT GCT ATT GCT ACT CAT
 M   G   D   D   G   V   L   A   C   A   I   A   T   H

GCT AAA ATC CGC GAT CTC GAG -anchor-Tbch
 A   K   I   R   D    Xho I
```

Tab. 1

Treatment	Cytokine ratio*				
	IL-4	IL-5	IL-9	IL-10	IL-13
Low dose	1.1	10.0	158.3	40.4	156.3
High dose	1.6	3.9	5.0	20.5	4.8
Control	1.0	34.4	1.6	51.4	103.2
Naive	1.0	1.0	1.0	1.0	1.0