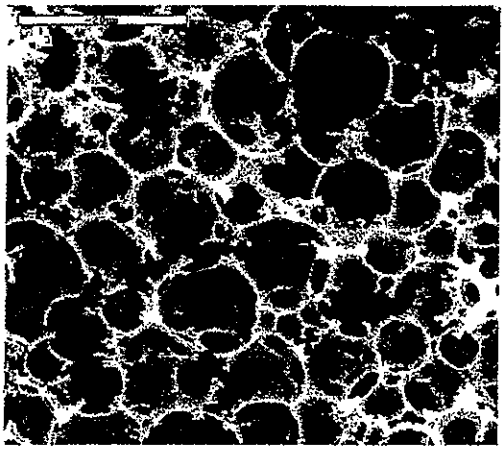
Figure 1



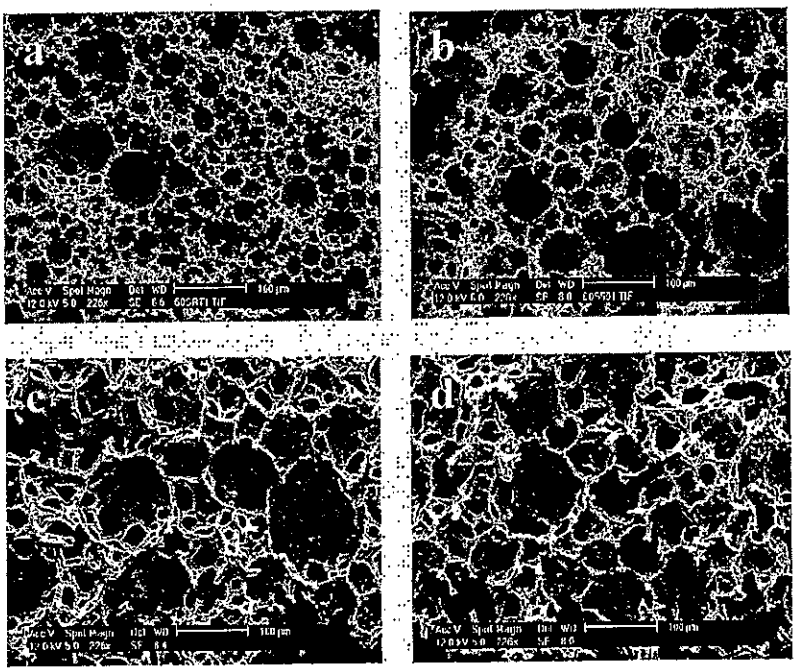


Figure 2

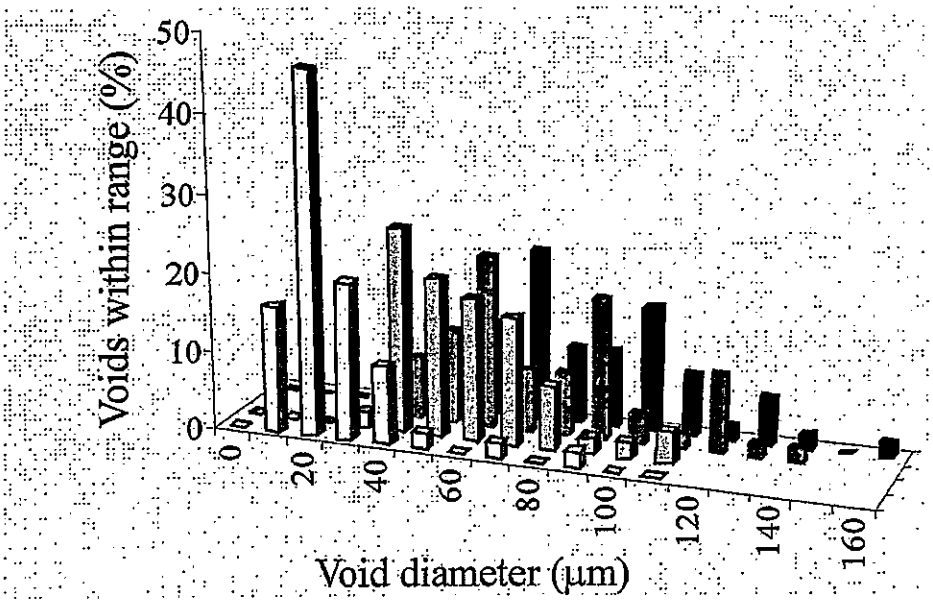

Voids within range (%)
50
40
30
20
10
0
0
20
40
60
80
100
120
140
160
Void diameter (µm)

Figure 3

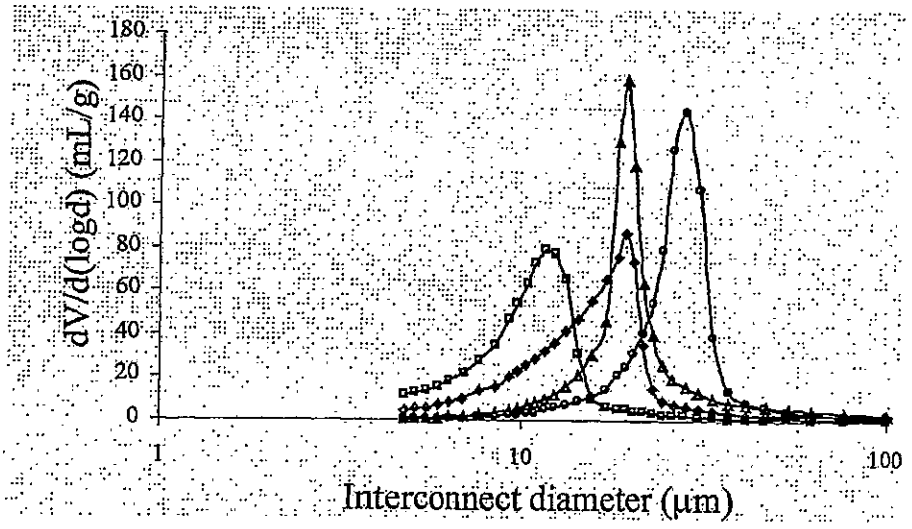

dV/d(logd) (mL/g)
180
160
140
120
100
80
60
40
20
0
1
10
100
Interconnect diameter (μm)

Figure 4

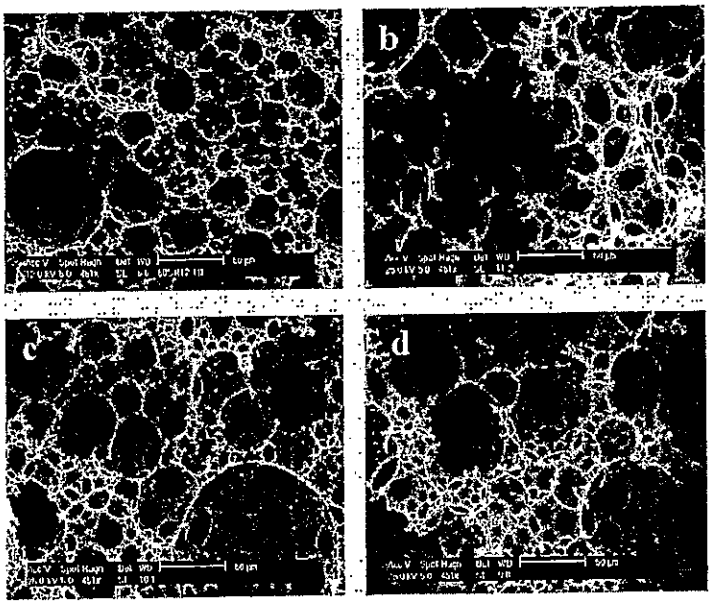


Figure 5

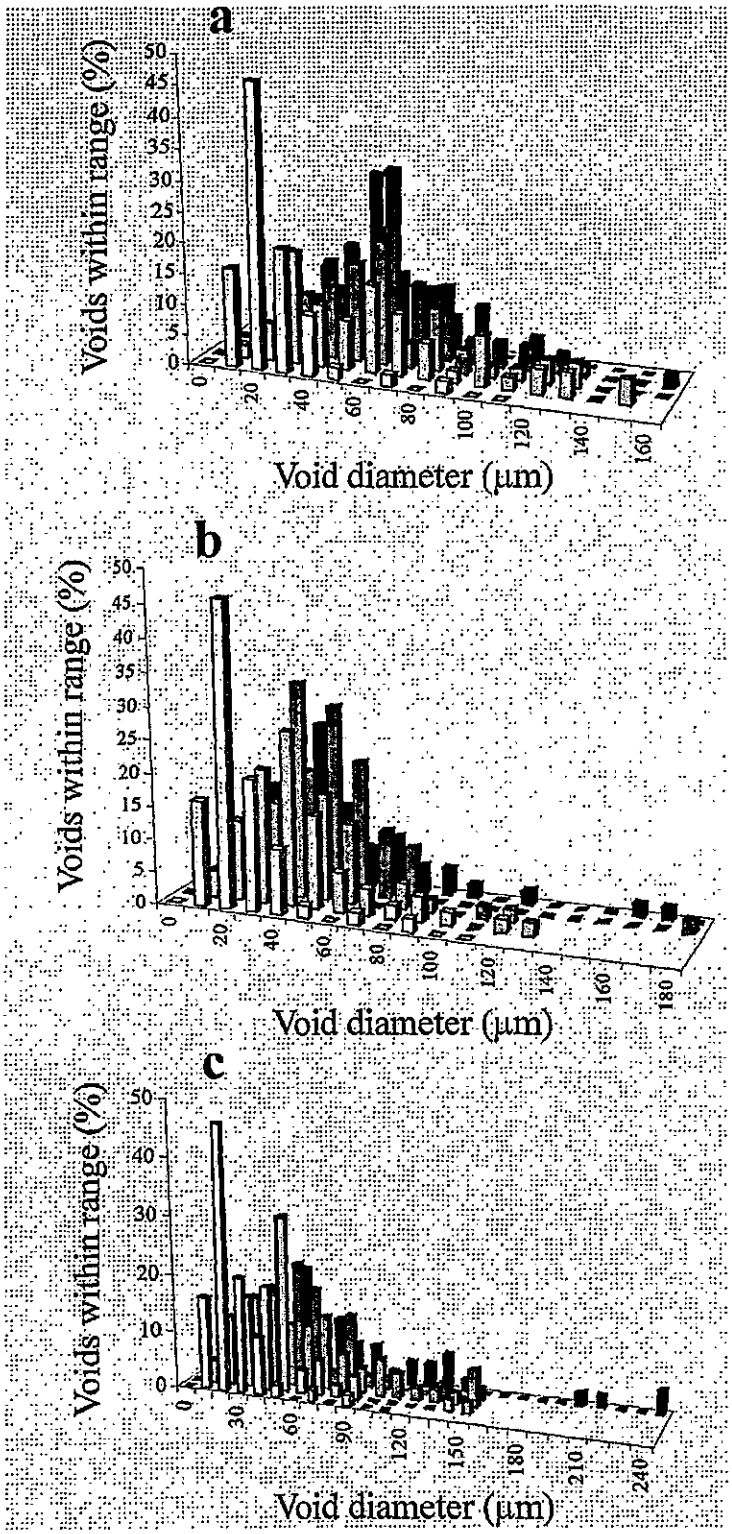

a
Voids within range (%)
Void diameter (μm)
b
Voids within range (%)
Void diameter (μm)
c
Voids within range (%)
Void diameter (μm)

Figure 6

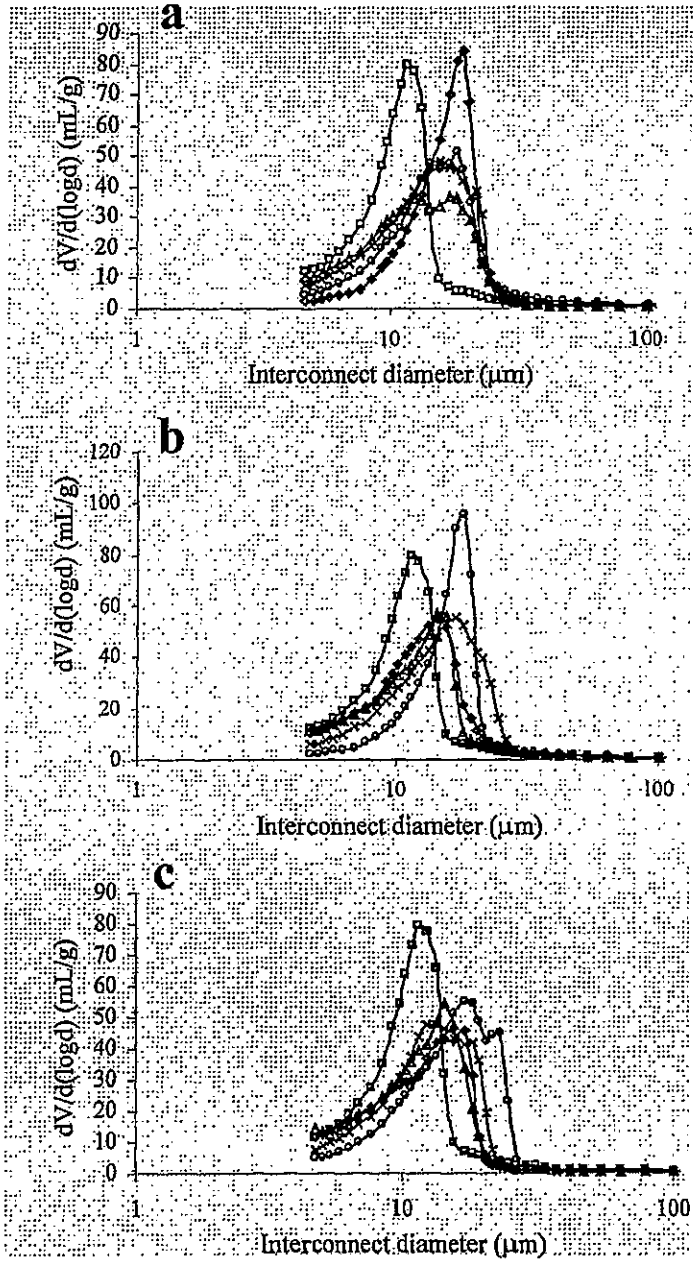

a
dV/d(logd) (mL/g)
Interconnect diameter (μm)
b
dV/d(logd) (mL/g)
Interconnect diameter (μm)
c
dV/d(logd) (mL/g)
Interconnect diameter (μm)

Figure 7

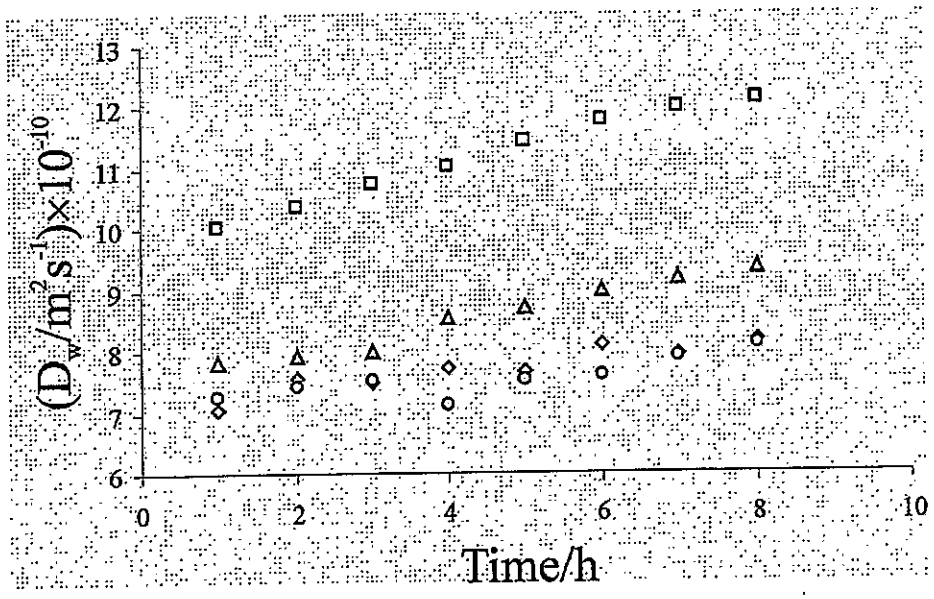


Figure 8

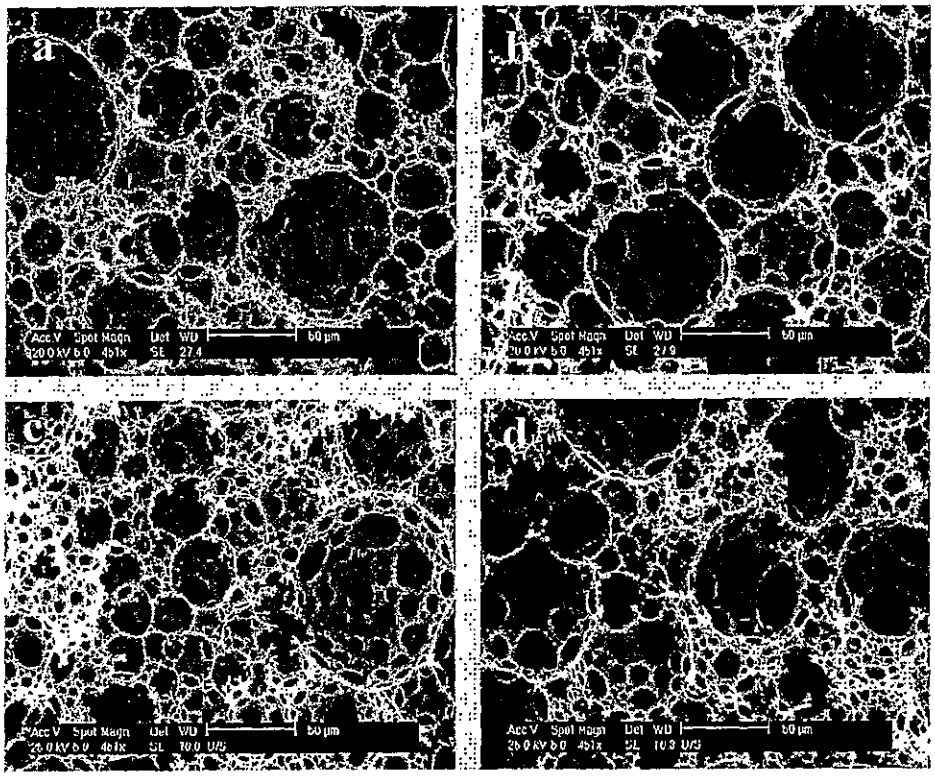


Figure 9

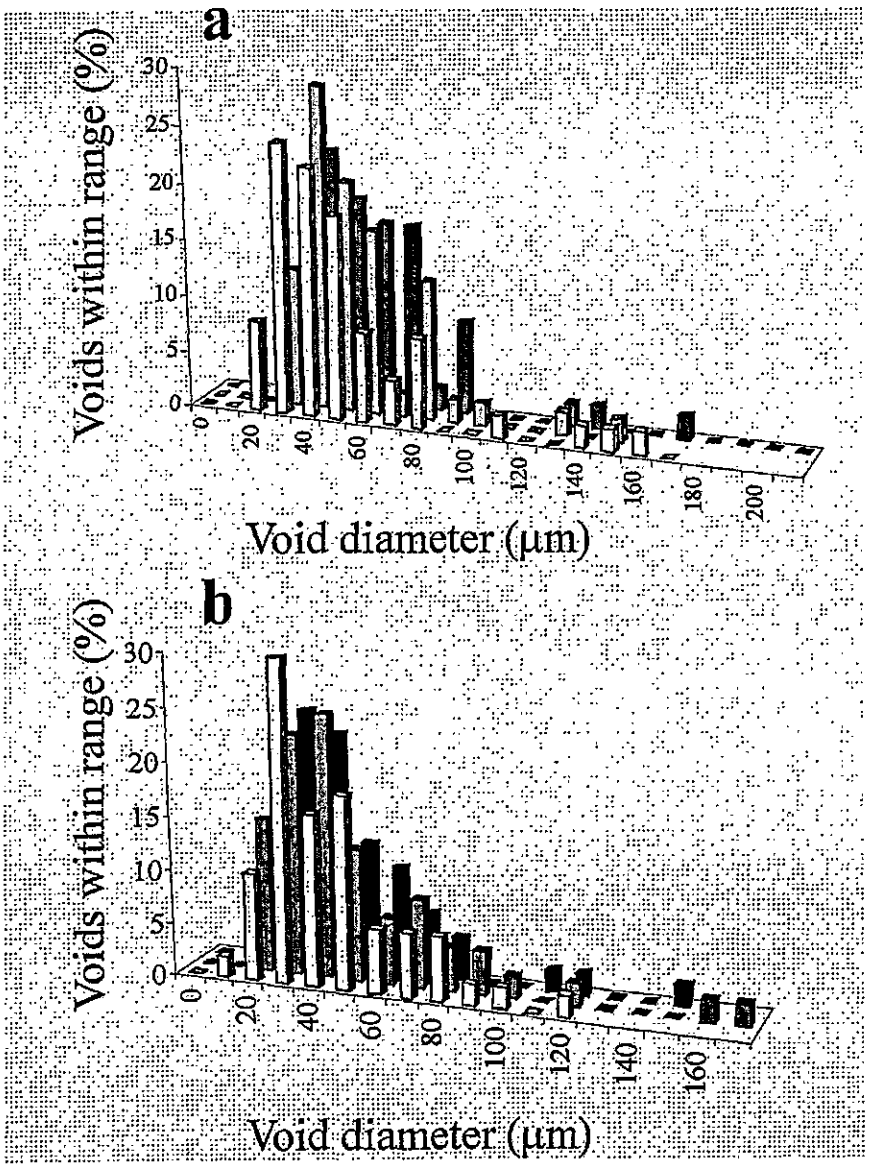

a
Voids within range (%)
30
25
20
15
10
5
0
0
20
40
60
80
100
120
140
160
180
200
Void diameter (μm)
b
Voids within range (%)
30
25
20
15
10
5
0
0
20
40
60
80
100
120
140
160
Void diameter (μm)

Figure 10

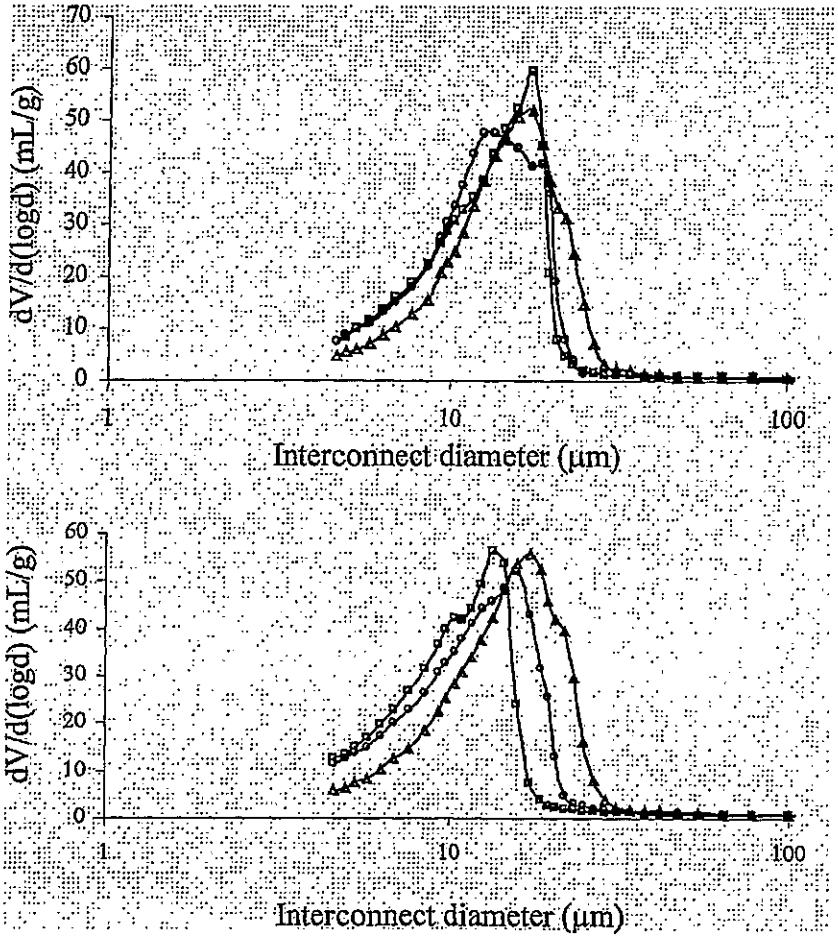

dV/d(logd) (mL/g)
70
60
50
40
30
20
10
0
1
10
100
Interconnect diameter (μm)
dV/d(logd) (mL/g)
60
50
40
30
20
10
0
1
10
100
Interconnect diameter (μm)

Figure 11

Figure 12

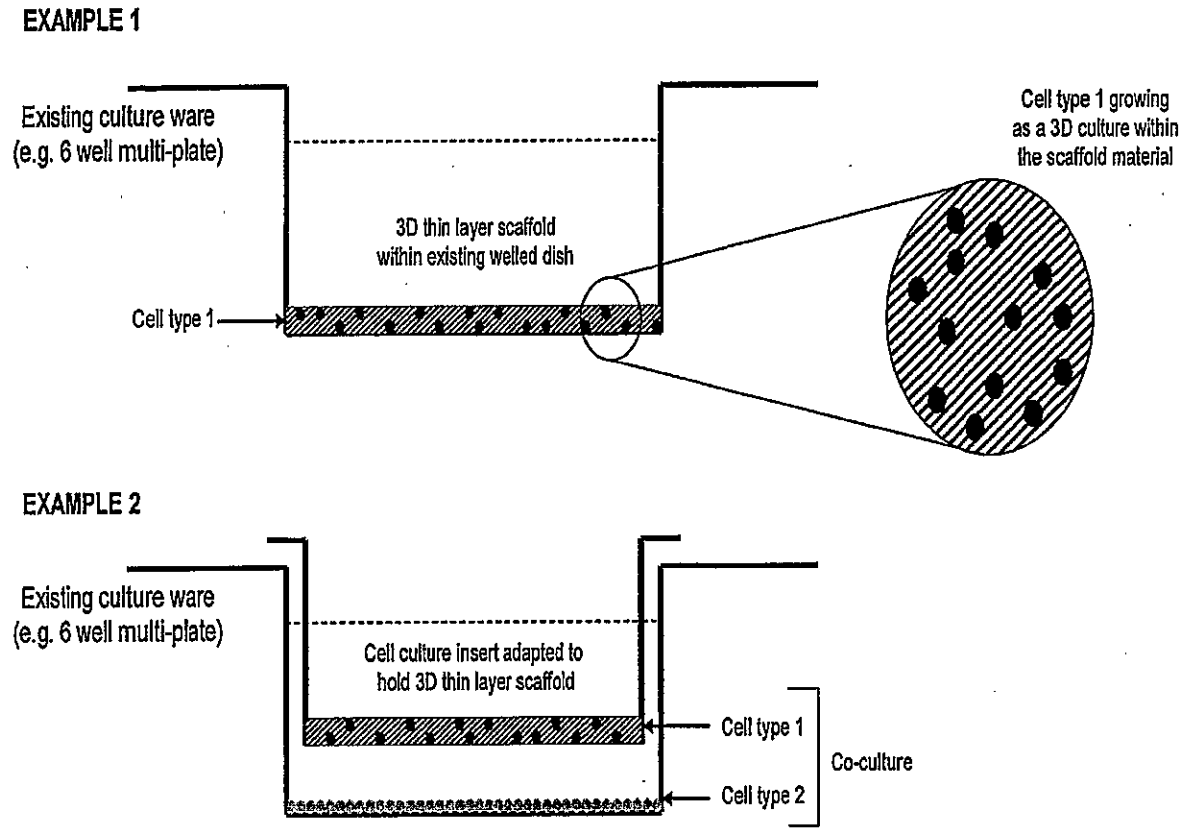

EXAMPLE 1
Existing culture ware
(e.g. 6 well multi-plate)
3D thin layer scaffold
within existing welled dish
Cell type 1
Cell type 1 growing
as a 3D culture within
the scaffold material
EXAMPLE 2
Existing culture ware
(e.g. 6 well multi-plate)
Cell culture insert adapted to
hold 3D thin layer scaffold
Cell type 1
Cell type 2
Co-culture

Figure 13

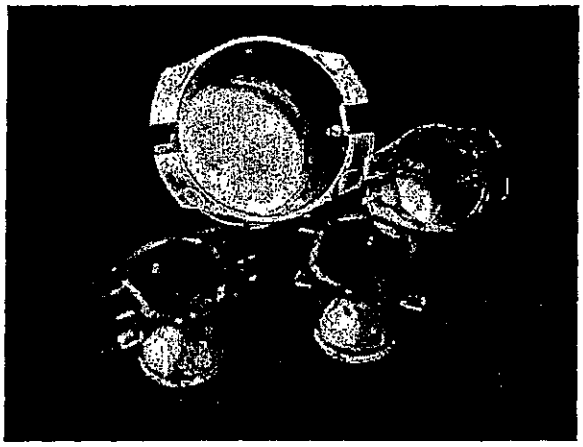


Figure 14

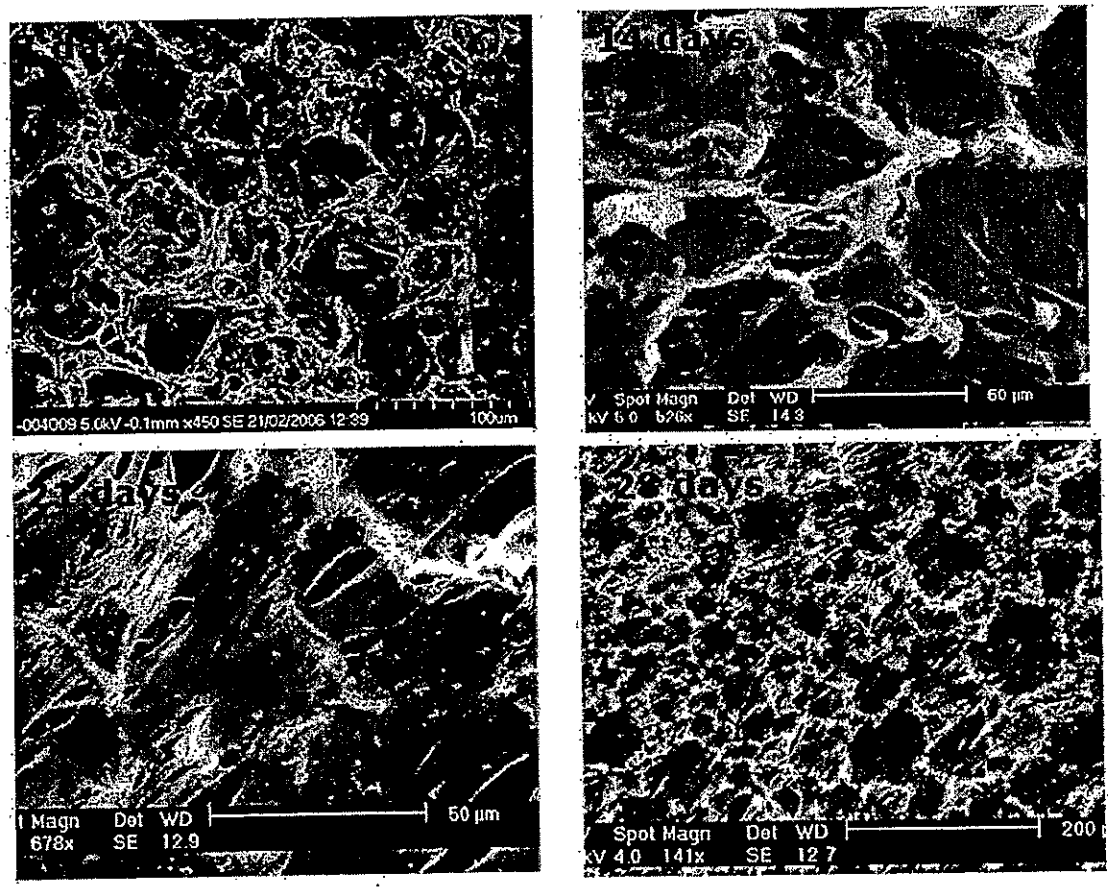
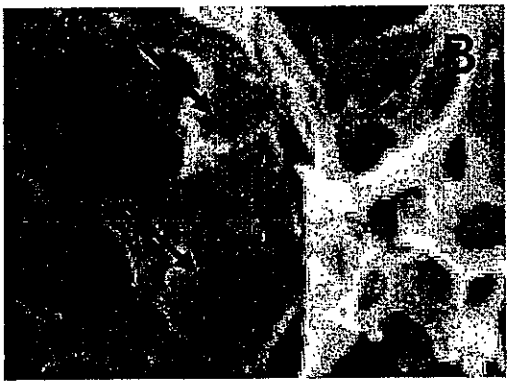

14 days
Spot Magn Det WD
60 µm
7 days
50 µm
Det WD
SE 12.9
28 days
Spot Magn Det WD
SE 12.7

Figure 15



PV 90%



PV 95%

Figure 16

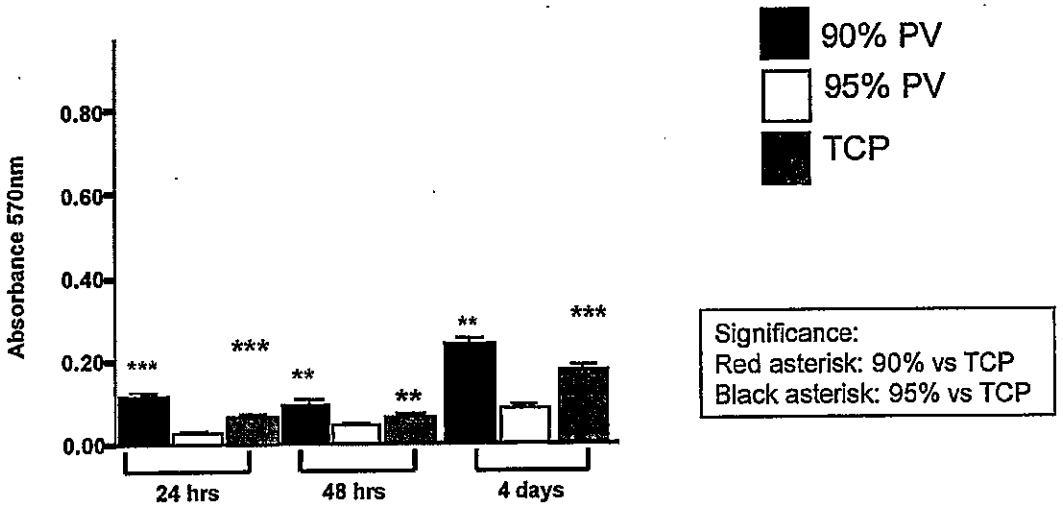

Absorbance 570nm
0.80
0.60
0.40
0.20
0.00
***
***
**
**
**
***
24 hrs
48 hrs
4 days
90% PV
95% PV
TCP
Significance:
Red asterisk: 90% vs TCP
Black asterisk: 95% vs TCP

Figure 17

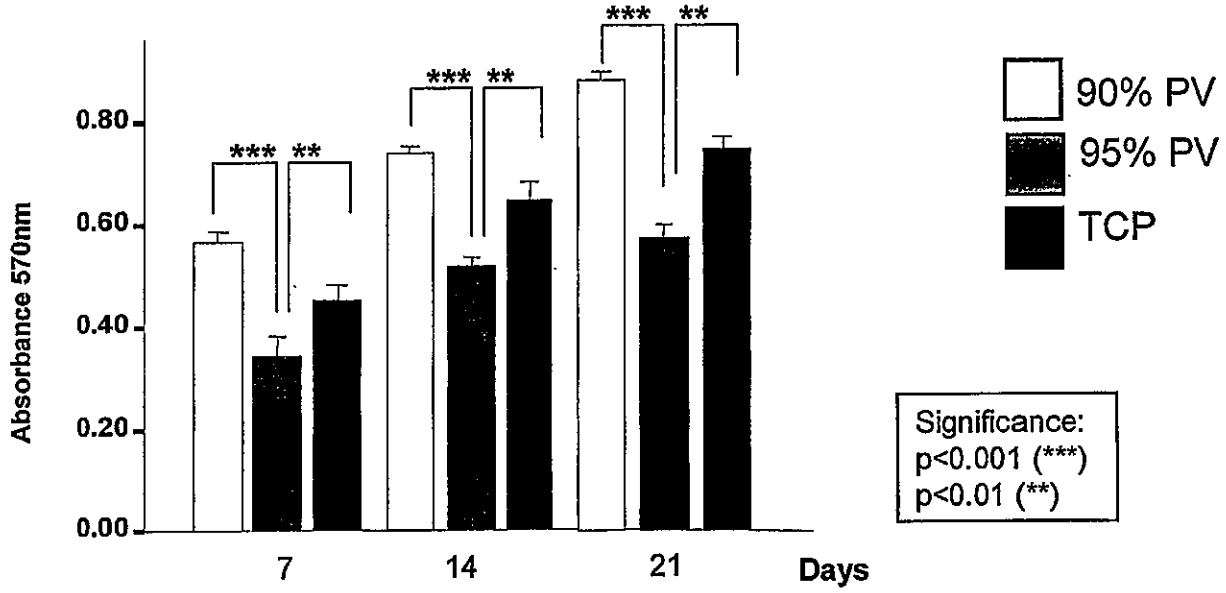
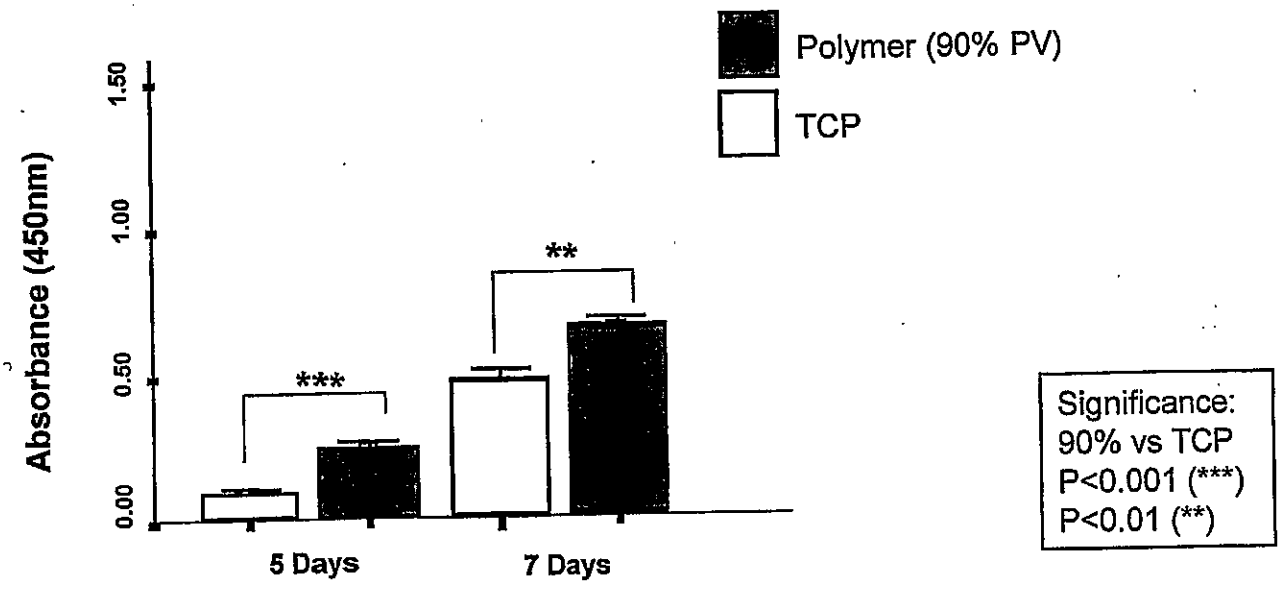

Absorbance 570nm
0.00
0.20
0.40
0.60
0.80
***
**
***
**
***
**
7
14
21
Days
90% PV
95% PV
TCP
Significance:
p<0.001 (***)
p<0.01 (**)

Figure 18



18/33

Figure 19

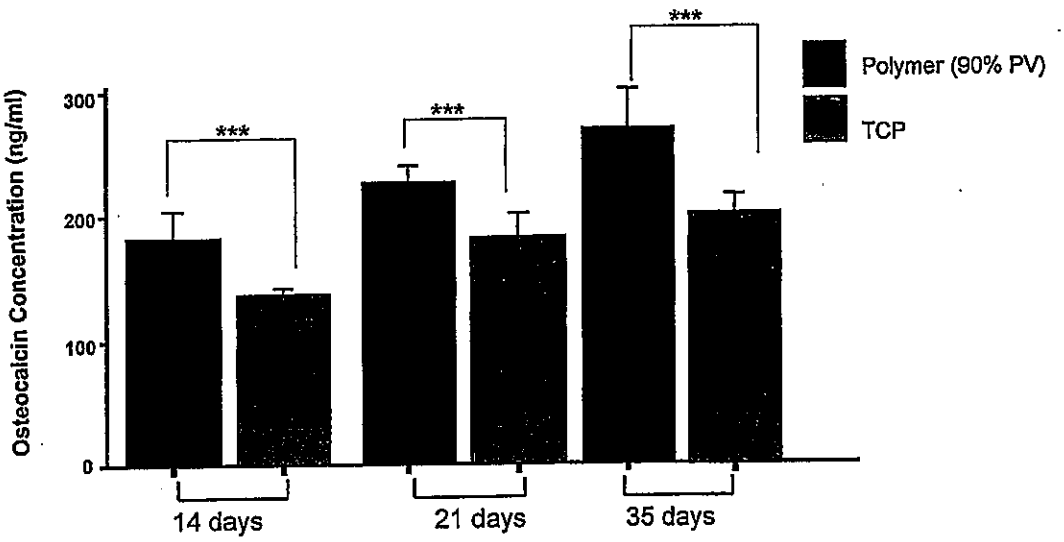

Osteocalcin Concentration (ng/ml)
300
200
100
0
***
***
***
14 days
21 days
35 days
Polymer (90% PV)
TCP

Figure 20

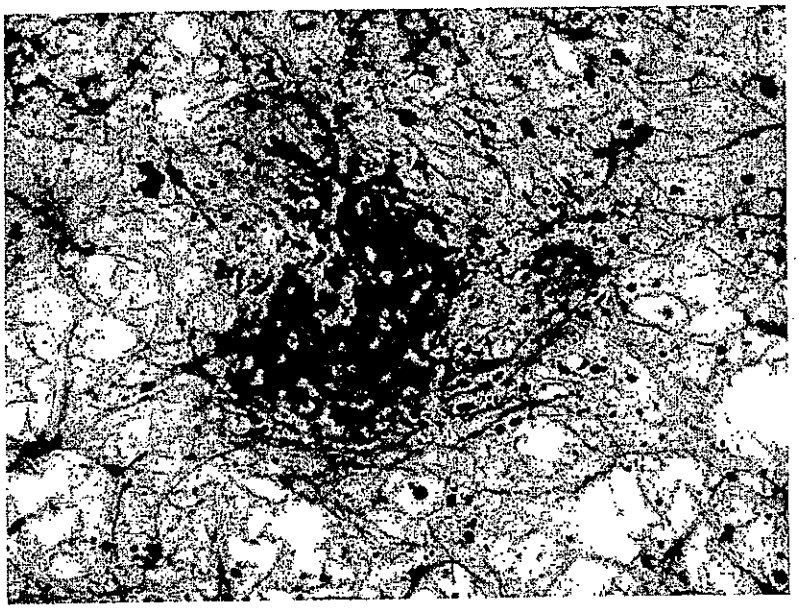


Figure 21

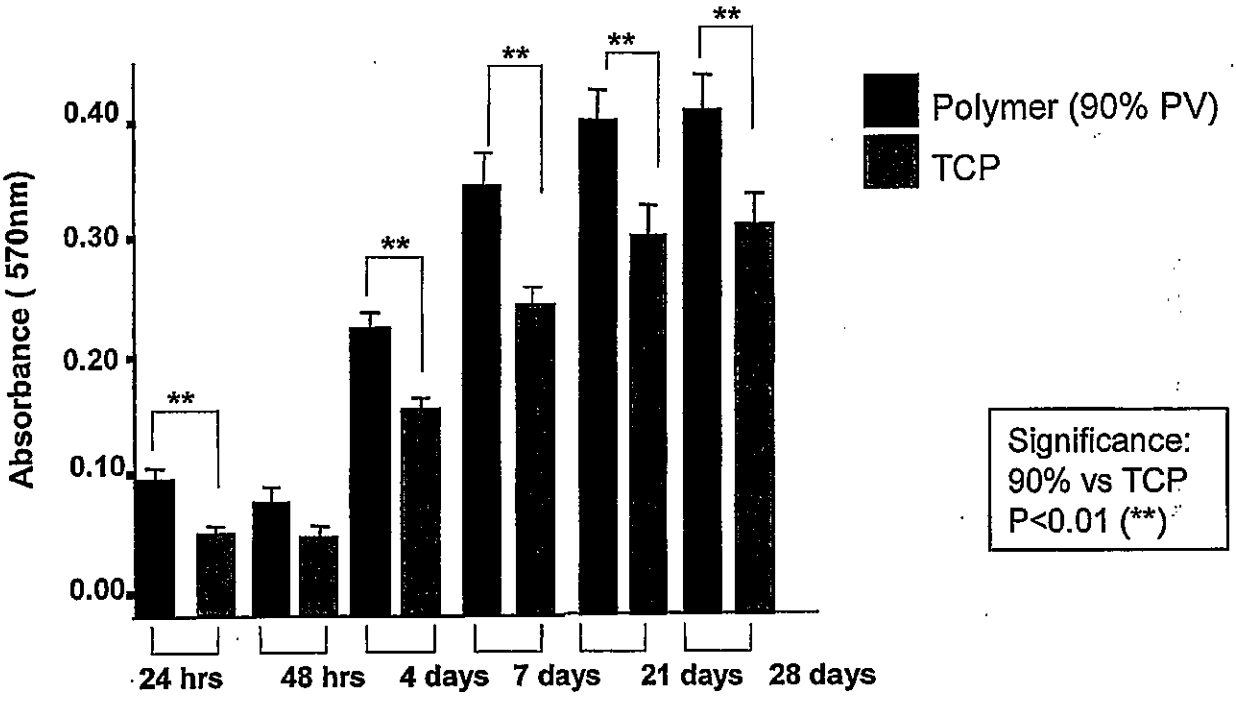

Absorbance (570nm)
0.40
0.30
0.20
0.10
0.00
**
**
**
**
**
24 hrs
48 hrs
4 days
7 days
21 days
28 days
Polymer (90% PV)
TCP
Significance:
90% vs TCP
P<0.01 (**)

Figure 22

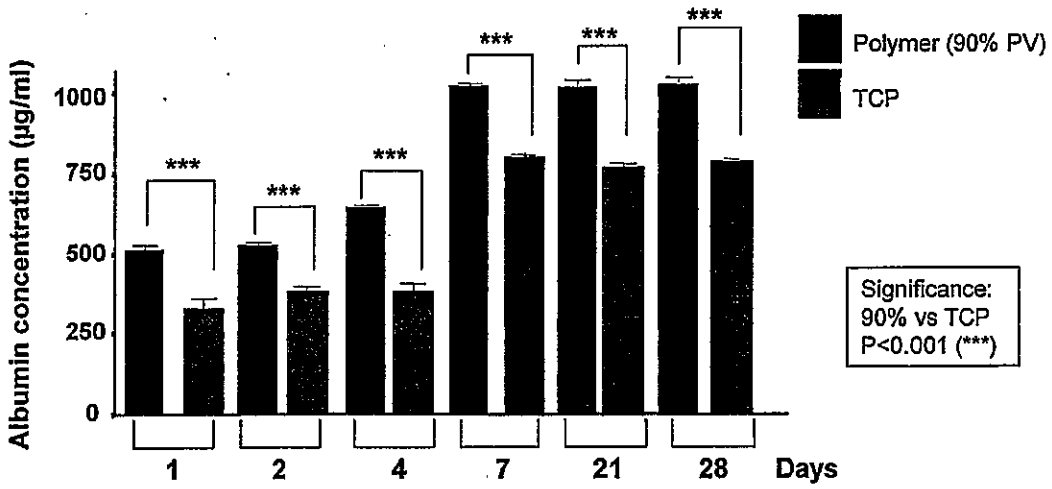

Albumin concentration (µg/ml)
1000
750
500
250
0
***
***
***
***
***
***
1
2
4
7
21
28
Days
Polymer (90% PV)
TCP
Significance:
90% vs TCP
P<0.001 (***)

Figure 23

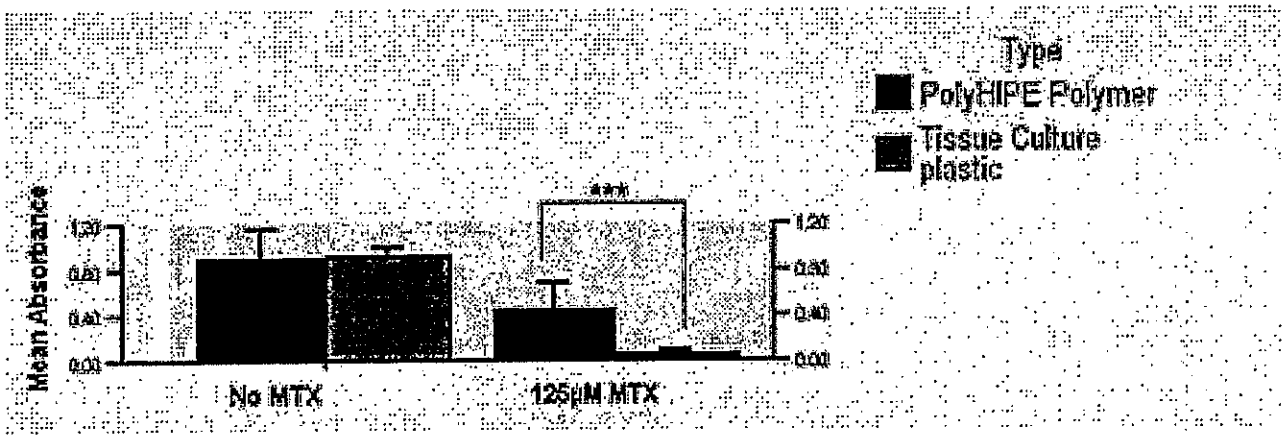

Type
PolyHIPE Polymer
Tissue Culture plastic
Mean Absorbance
No MTX
125µM MTX

Figure 24

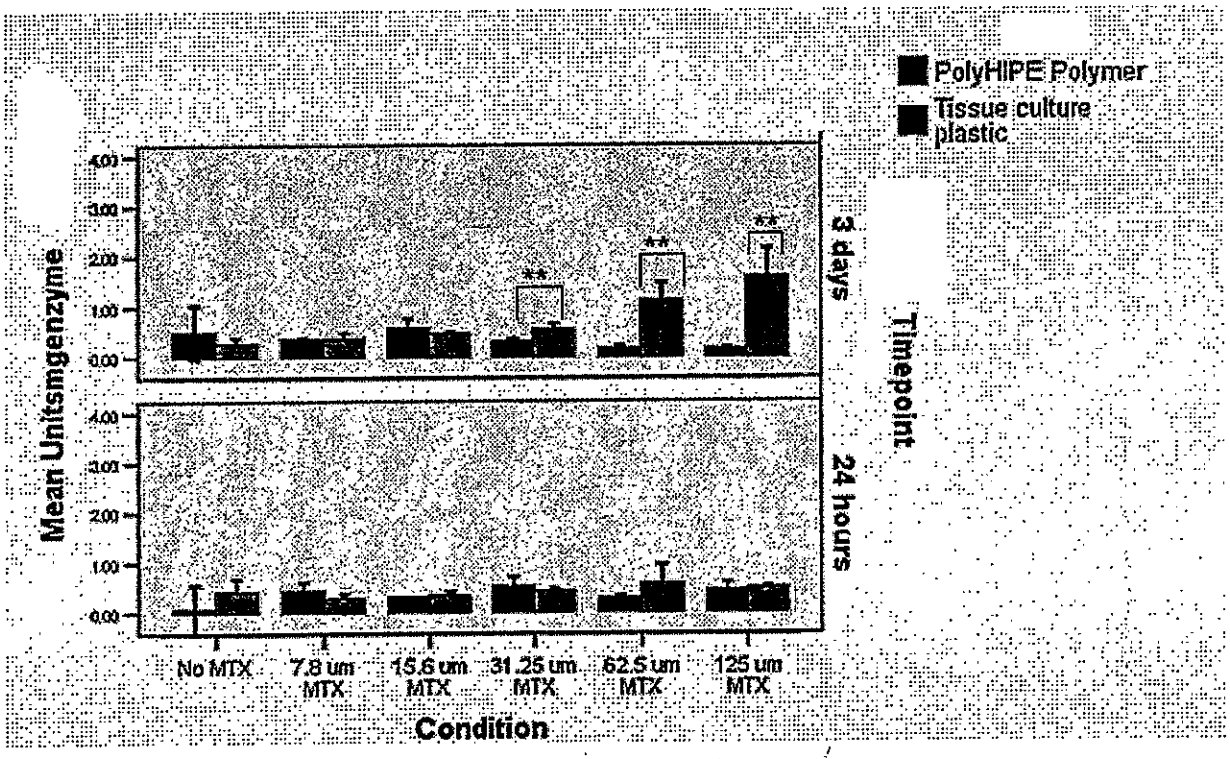

PolyHIPE Polymer
Tissue culture plastic
Mean Unitsmgenzyme
4.00
3.00
2.00
1.00
0.00
**
**
**
3 days
24 hours
Timepoint
No MTX
7.8 um MTX
15.6 um MTX
31.25 um MTX
62.5 um MTX
125 um MTX
Condition

Figure 25

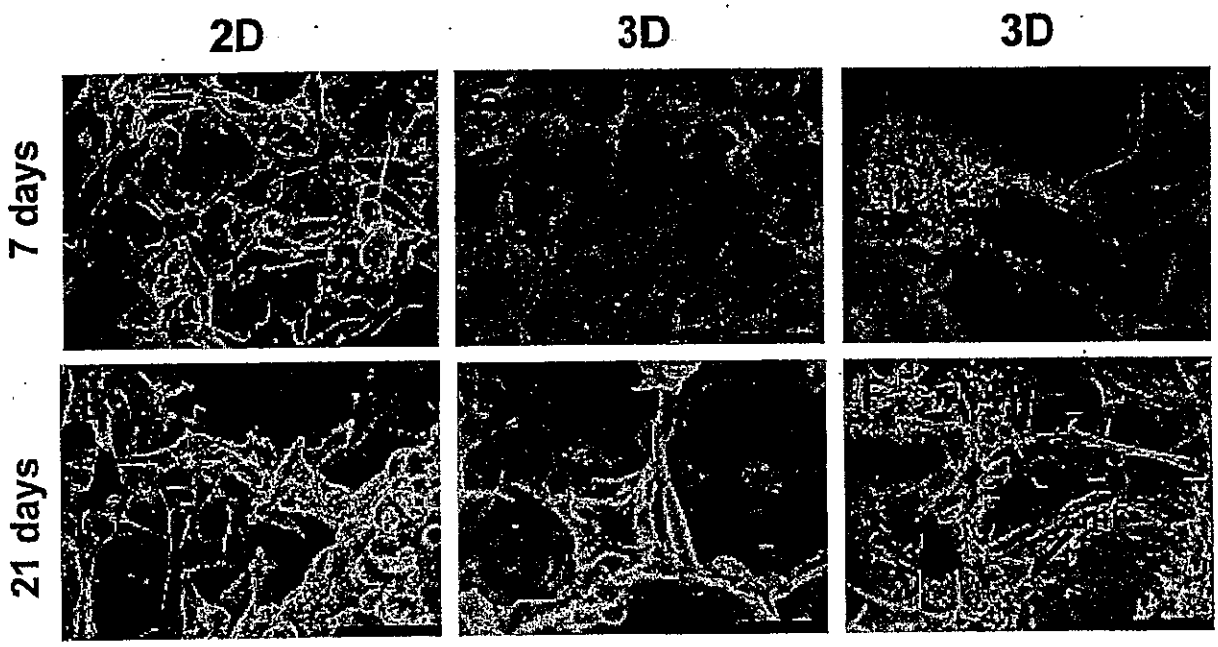


Figure 26

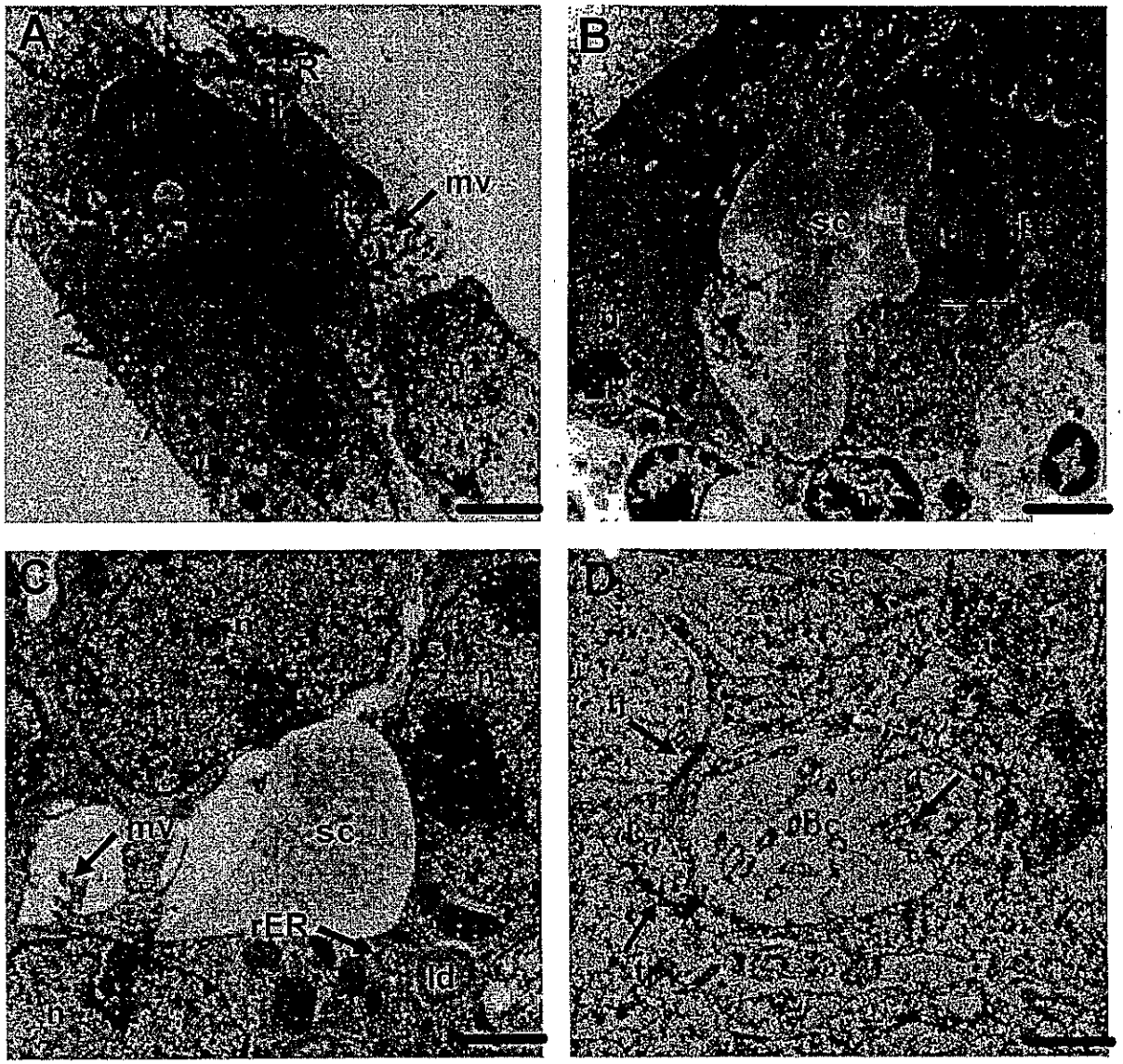


Figure 27

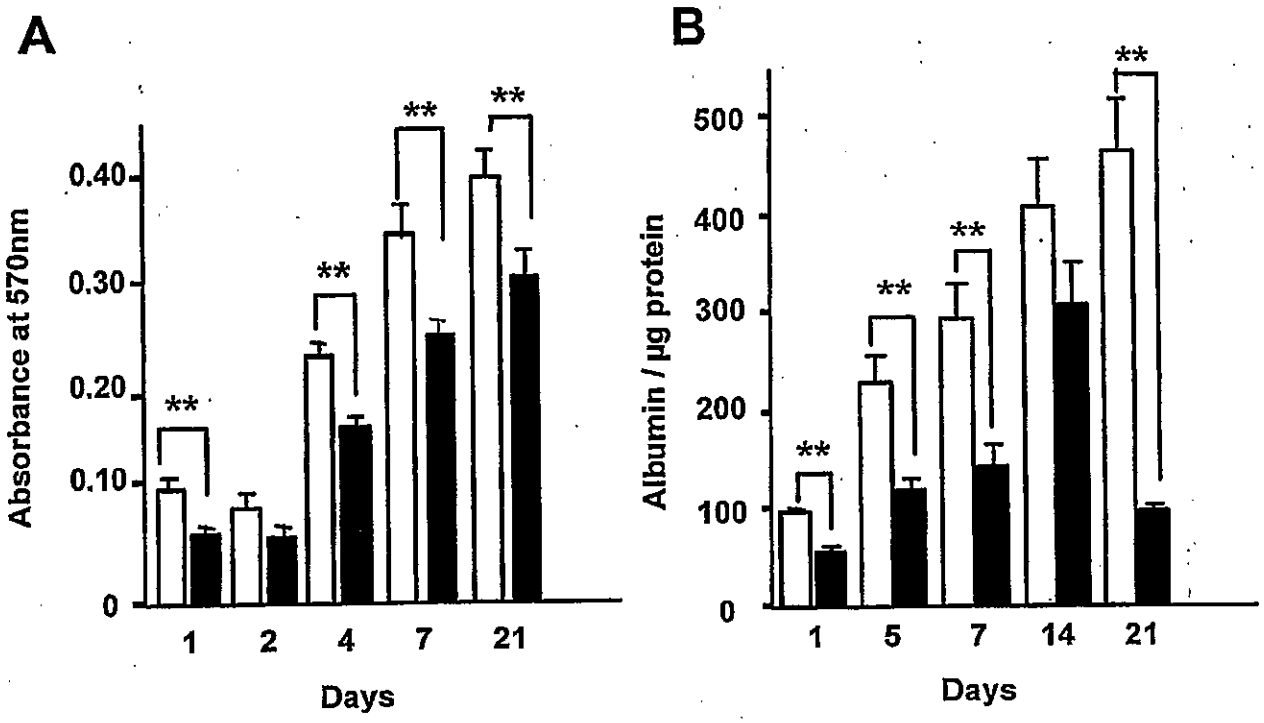

A
Absorbance at 570nm
0.40
0.30
0.20
0.10
0
**
**
**
**
1
2
4
7
21
Days
B
Albumin / µg protein
500
400
300
200
100
0
**
**
**
**
1
5
7
14
21
Days

Figure 28

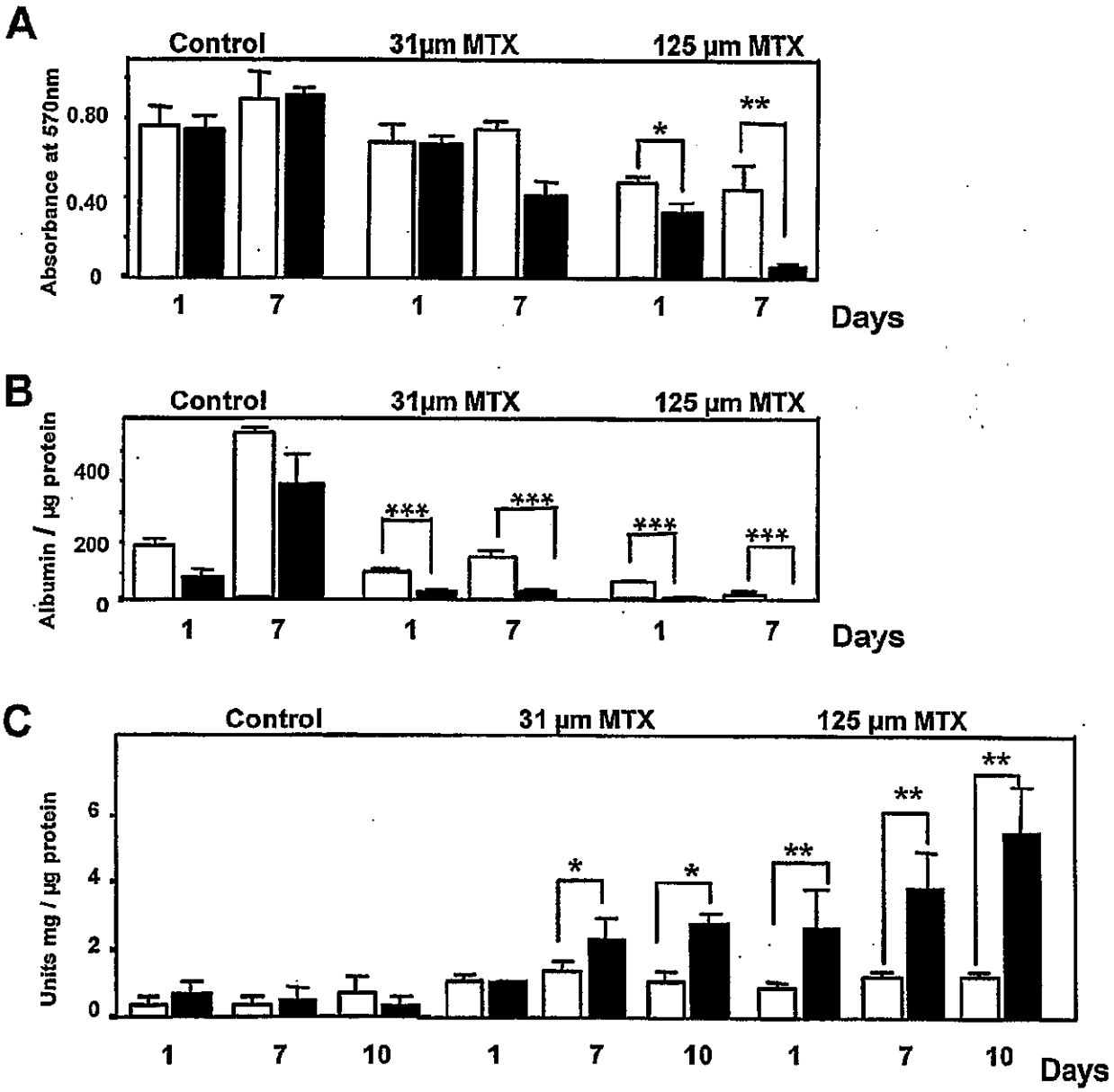

A
Control
31µm MTX
125 µm MTX
Absorbance at 570nm
0.80
0.40
0
*
**
1
7
1
7
1
7
Days
B
Control
31µm MTX
125 µm MTX
Albumin / µg protein
400
200
0
***
***
***
***
1
7
1
7
1
7
Days
C
Control
31 µm MTX
125 µm MTX
Units mg / µg protein
6
4
2
0
*
*
**
**
**
1
7
10
1
7
10
1
7
10
Days

Figure 29

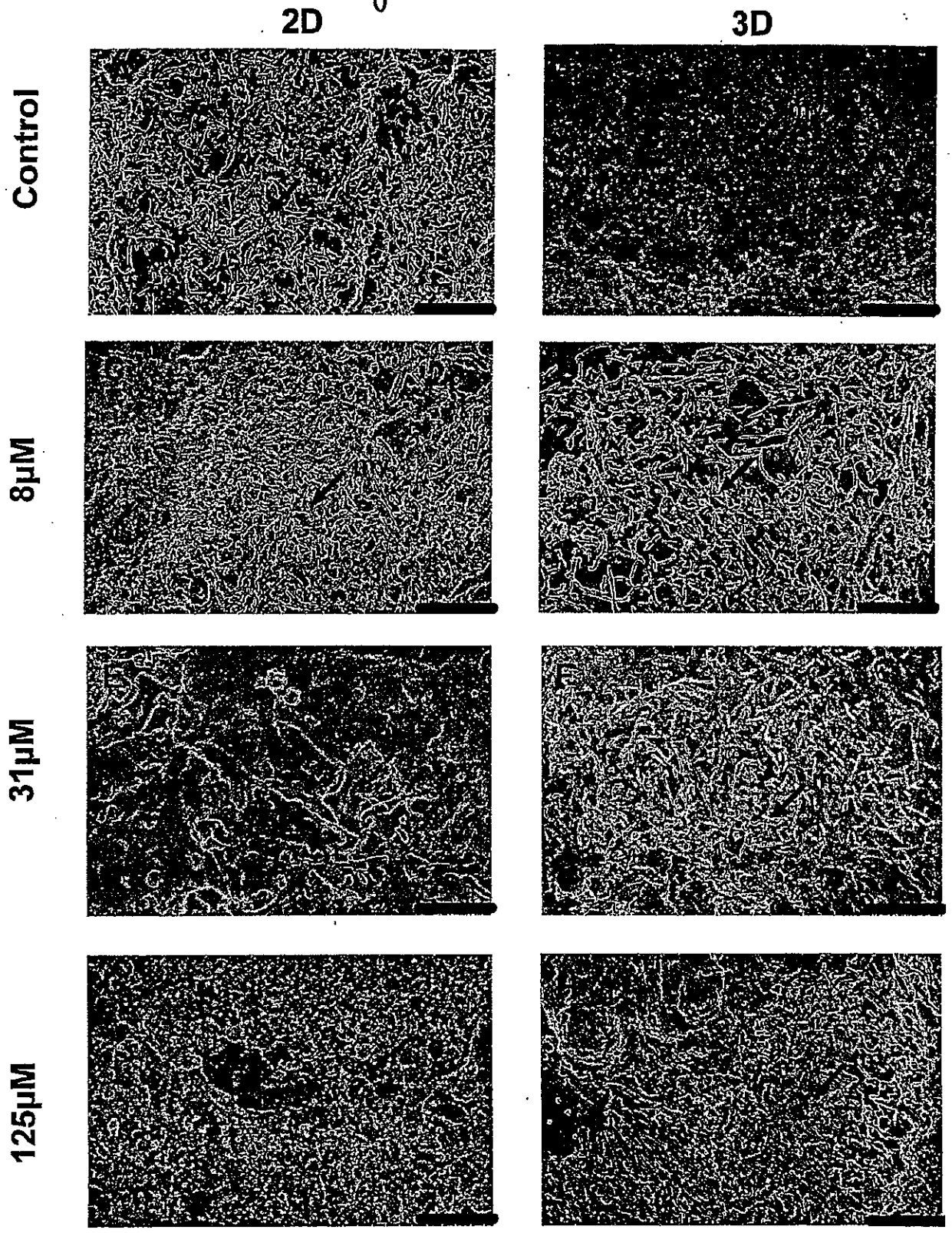
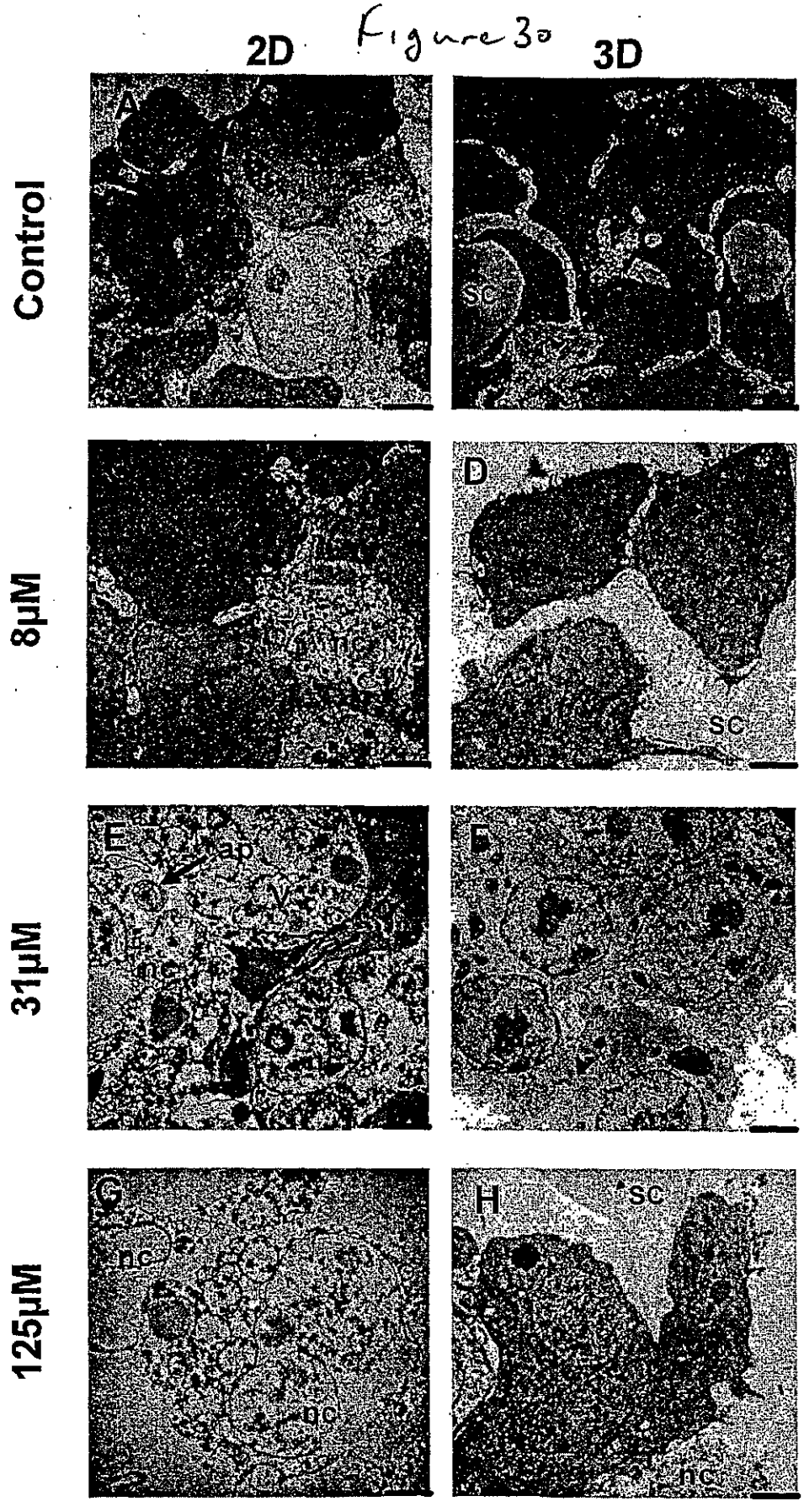


Figure 3o



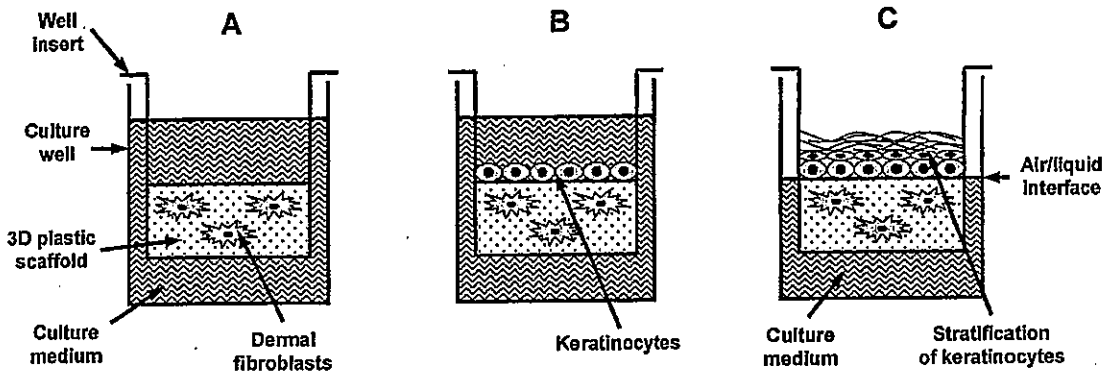
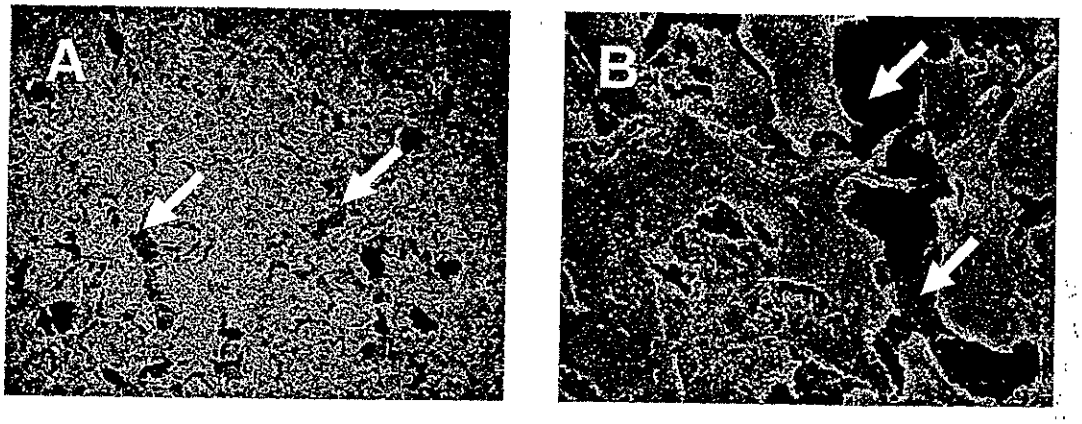

A
B
C
Well insert
Culture well
3D plastic scaffold
Culture medium
Dermal fibroblasts
Keratinocytes
Air/liquid interface
Culture medium
Stratification of keratinocytes

Figure 31

Figure 32



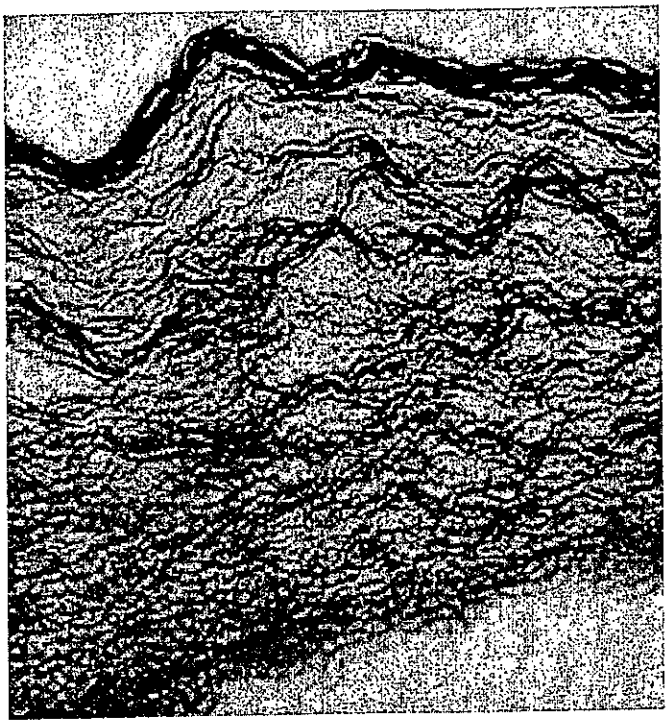


Figure 33