

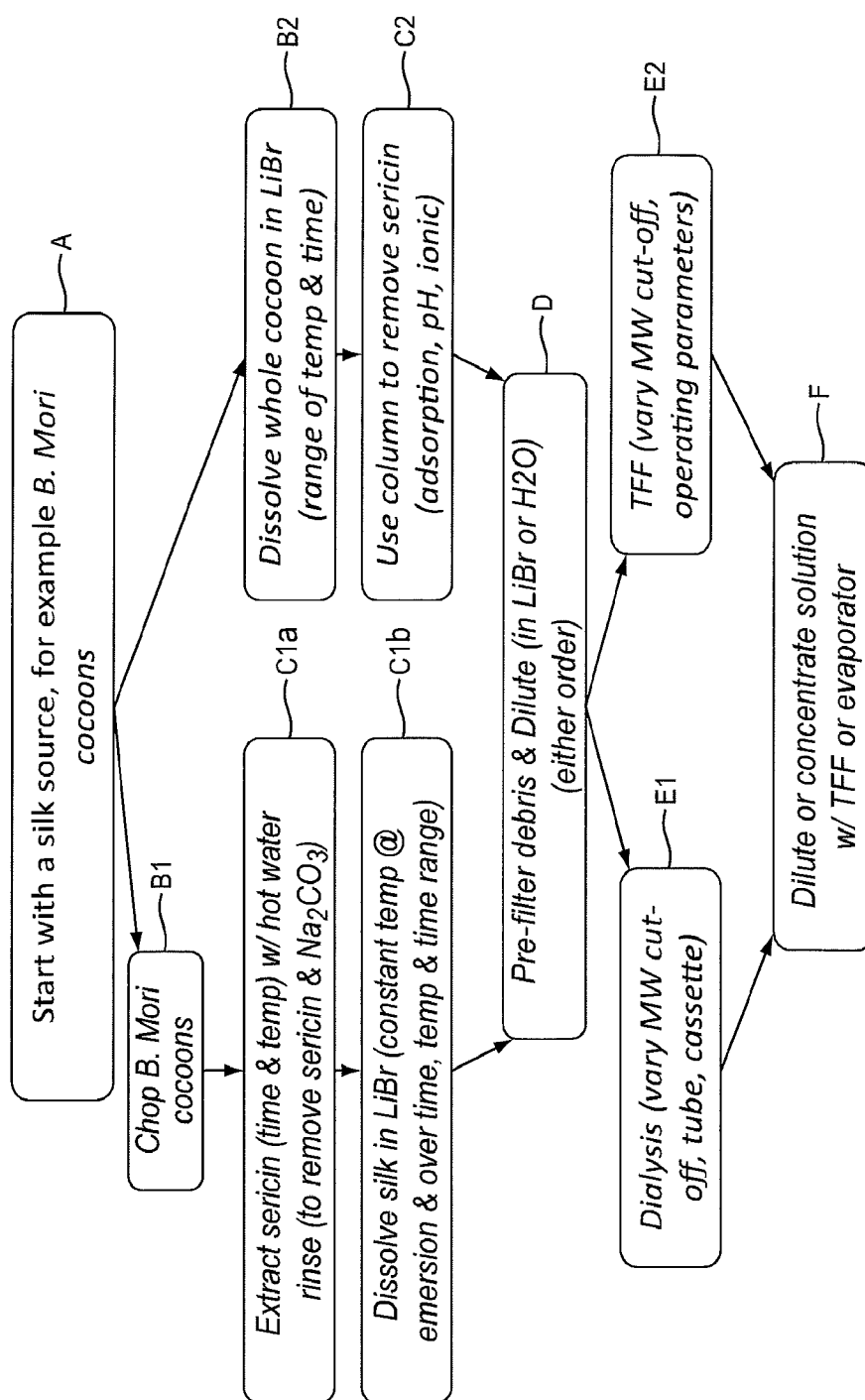


FIG. 1

2/55

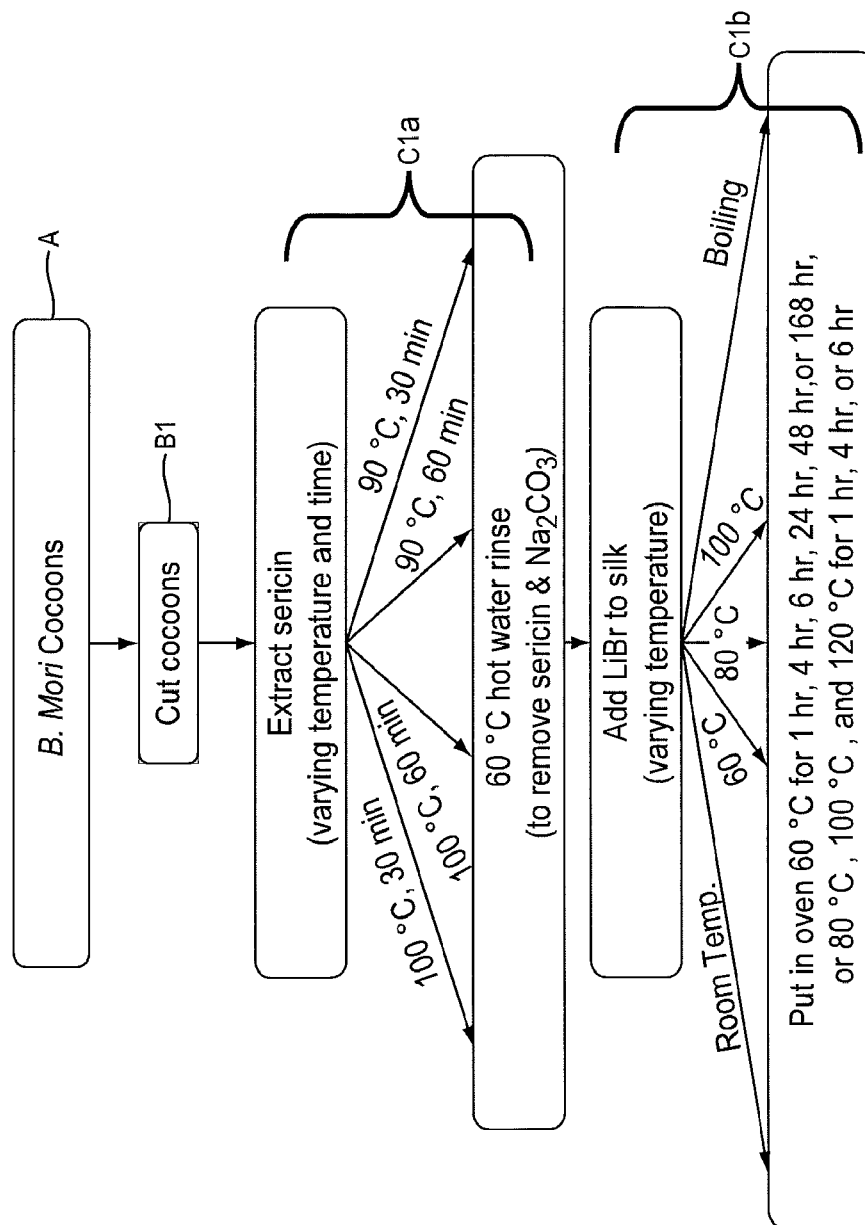


FIG. 2

Lithium Bromide and Sodium Carbonate
Concentration in Silk Protein Solution

Sample ID	Sample Description	Average Concentration of Na ₂ CO ₃ (ppm)	Average Concentration of LiBr (ppm)
A	TFF 5kDa	32.13	90.85
B	TFF 10 kDa	42.91	107
C	TFF 10 kDa	49.06	78.55
D	STI 1(TFF-10-0019)	2.17	129.07
E	STI 2(TFF-10-0033)	2.63	196.2
F	STI 3(TFF-10-0034)	4.18	248.93

Method: 100C extraction for 60 min, 60C rinse, 100C LiBr in 100 °C oven for 60 min.
Note that TFF could be run for longer and/or at different flow rates (as varied between A-C and D-F) to alter ppm of Na₂CO₃ and LiBr.

FIG. 3

Lithium Bromide and Sodium Carbonate content
in Silk Protein Solution

Sample ID	Solution Volume Equivalent to (X) Films	Sample Weight (mg)	Concentration	
			Na ₂ CO ₃	LiBr
1	6	0.171	ND	ND
2	8	0.228	ND	ND
3	10	0.285	ND	ND
4	12	0.342	ND	ND
5	Neat	-	ND	ND

*ND=None Detected

Method: 100 °C boil for 60 min, 60C rinse, LiBr in 60 °C oven for 4-6 hours

FIG. 4

Molecular Weights of Silk Protein Solutions

Sample ID	Sample Description	Mn	Mw	Polydispersity (PD) (Mw/Mn)
A	TFF 5kDa	14,497	33,874	2.3366
B	TFF 10 kDa	14,542	33,455	2.3006
C	TFF 10 kDa	14,972	34,026	2.2726
D	Silk protein solution in water	12,055	26,531	2.2008

Method:
TFF: 100 °C extraction for 60 min, 60 °C rinse, 100 °C LiBr in 100 °C oven for 60 min.
Silk Protein: 100 °C extraction for 20 min, RT rinse, LiBr in 60 °C oven for 4-6 hours

FIG. 5

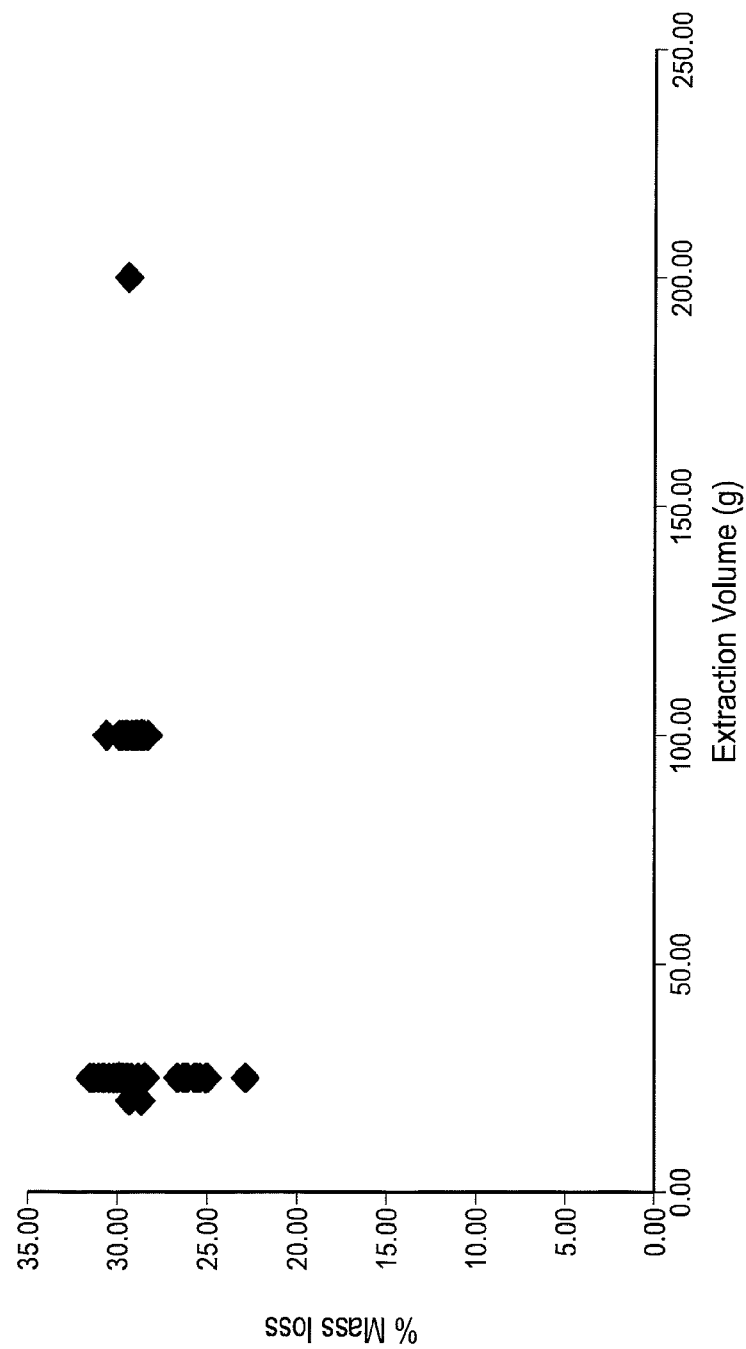


FIG. 6

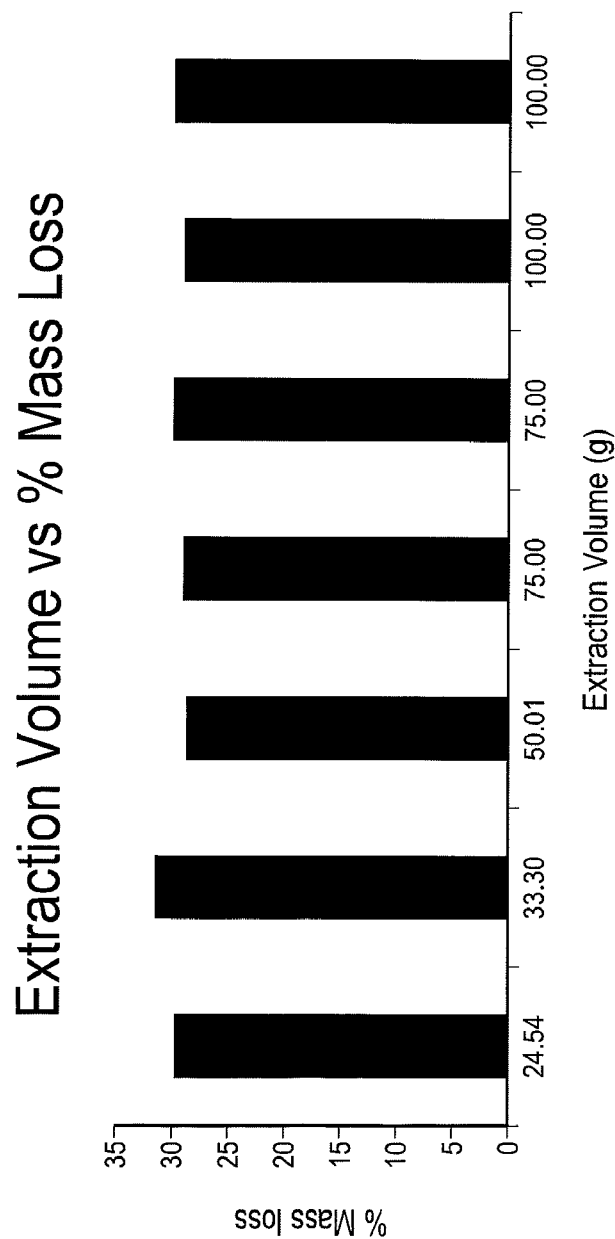


FIG. 7

8/55

Sample	LiBr (M)	Avg MW	PD
STI 1(TFF-10-0019)	9.3	15727	2.033
STI 2(TFF-10-0033)	9.3	24587	2.3669
STI 3(TFF-10-0034)	9.3	25273	2.338
STI 9.3 M avg		21862	2.25
STI 1(TFF-10-0031)	~7.5	29645	3.0868
STI 2(TFF-10-0030)	~7.5	26856	2.9748
STI 7.5M avg		28250.5	3.0308

* TFF-10-0019 from 2 25 g extraction / 35 g dissolution

* TFF-10-0034 from 100 g extraction/ 17-35 g dissolution

* TFF-10-0033 from 100 g extraction/ 100 g dissolution

FIG. 8

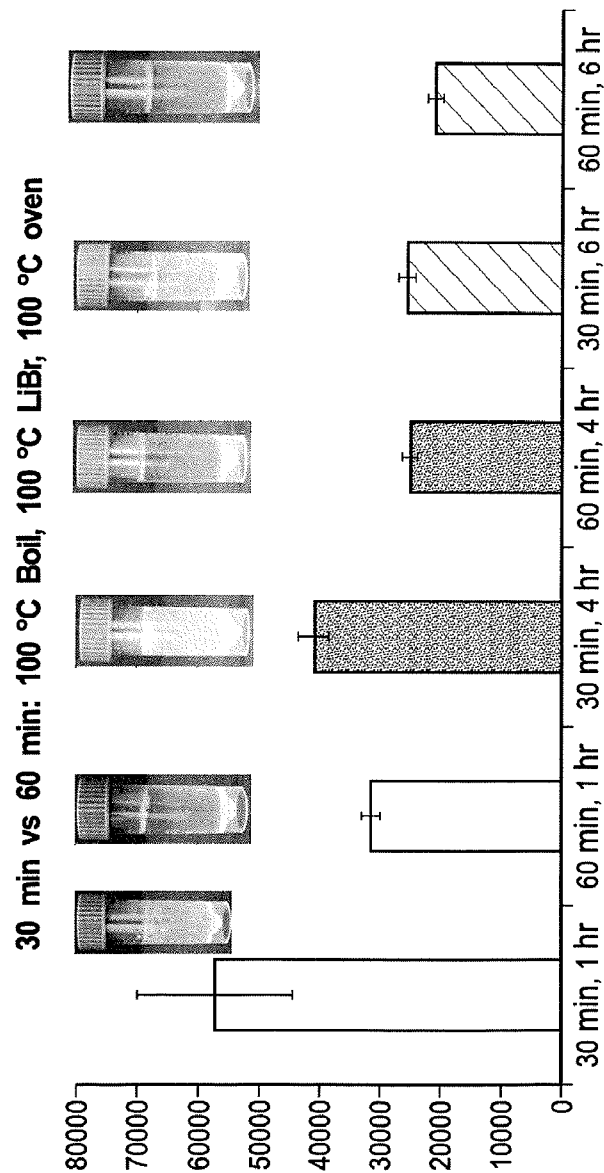


FIG. 9

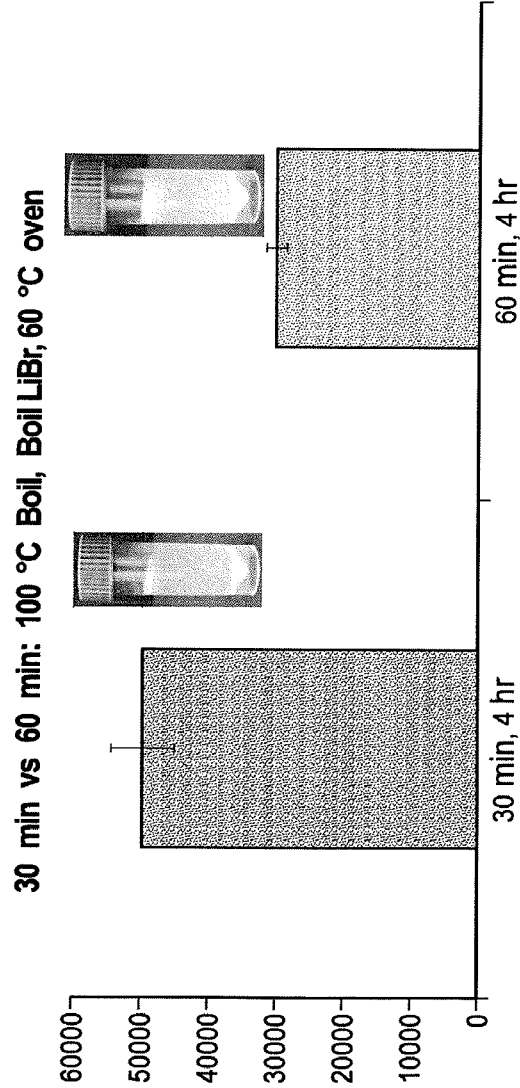


FIG. 10

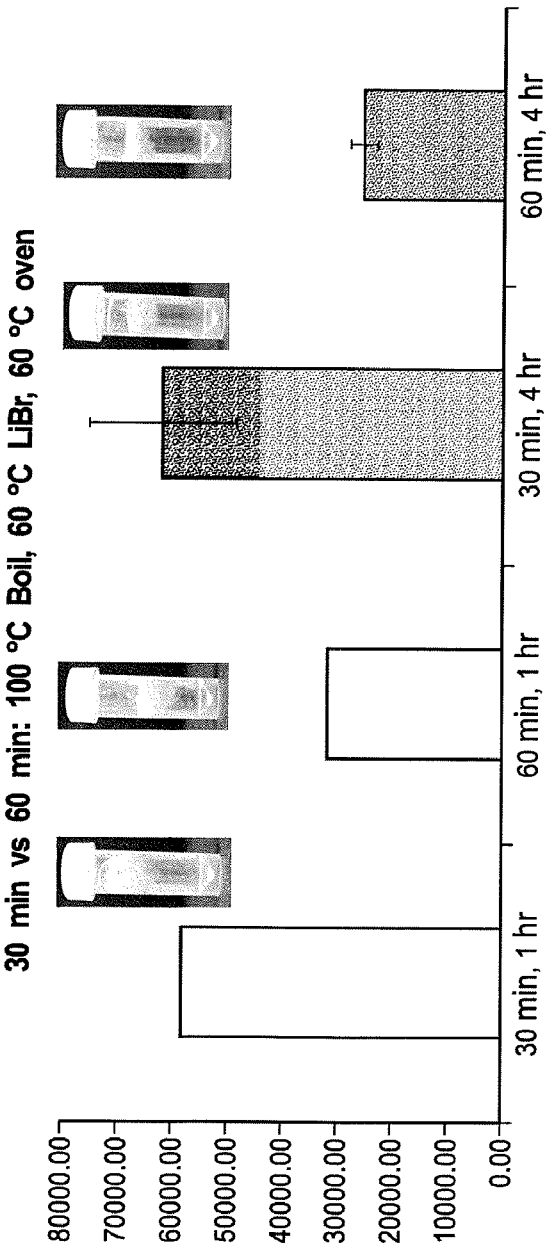


FIG. 11

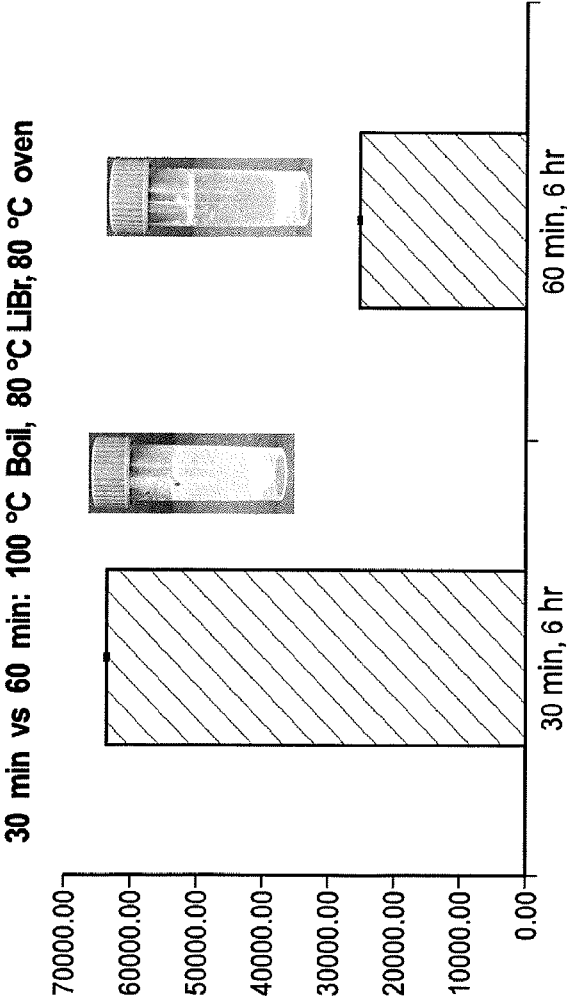


FIG. 12

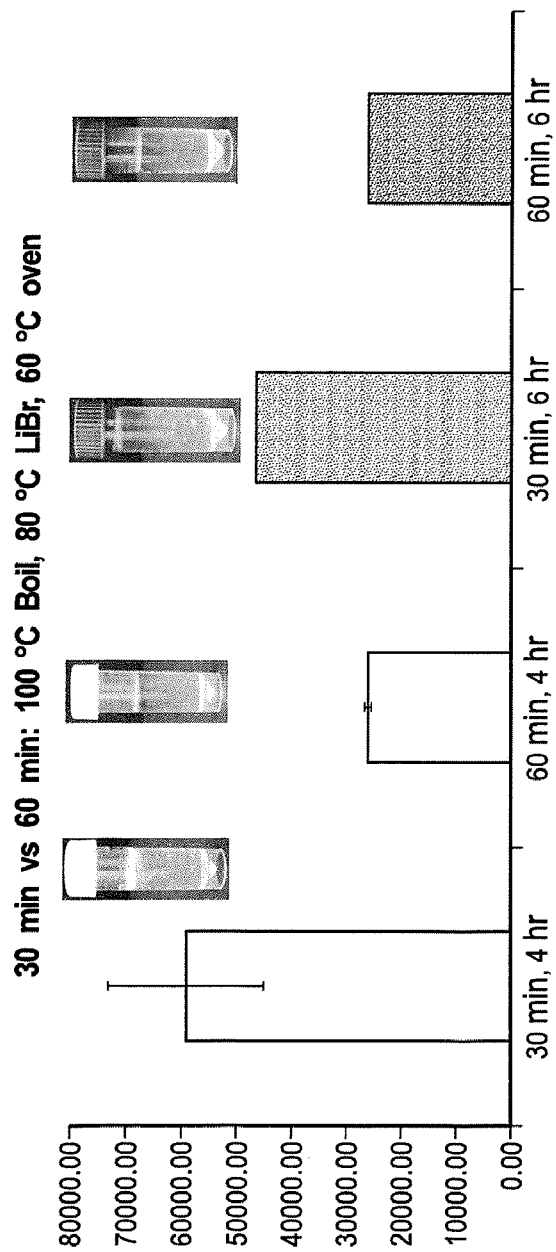


FIG. 13

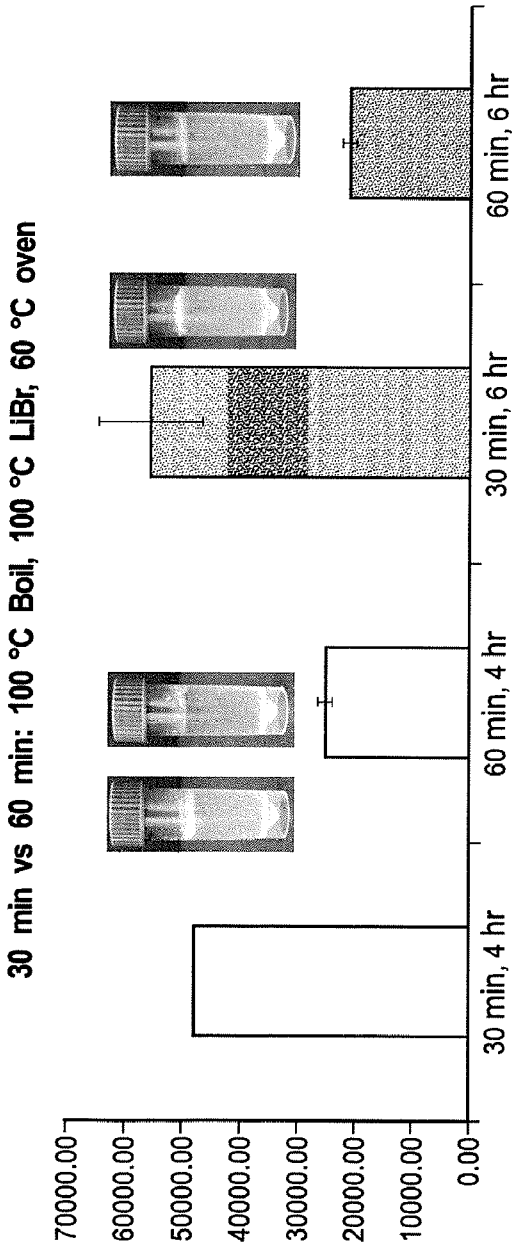


FIG. 14

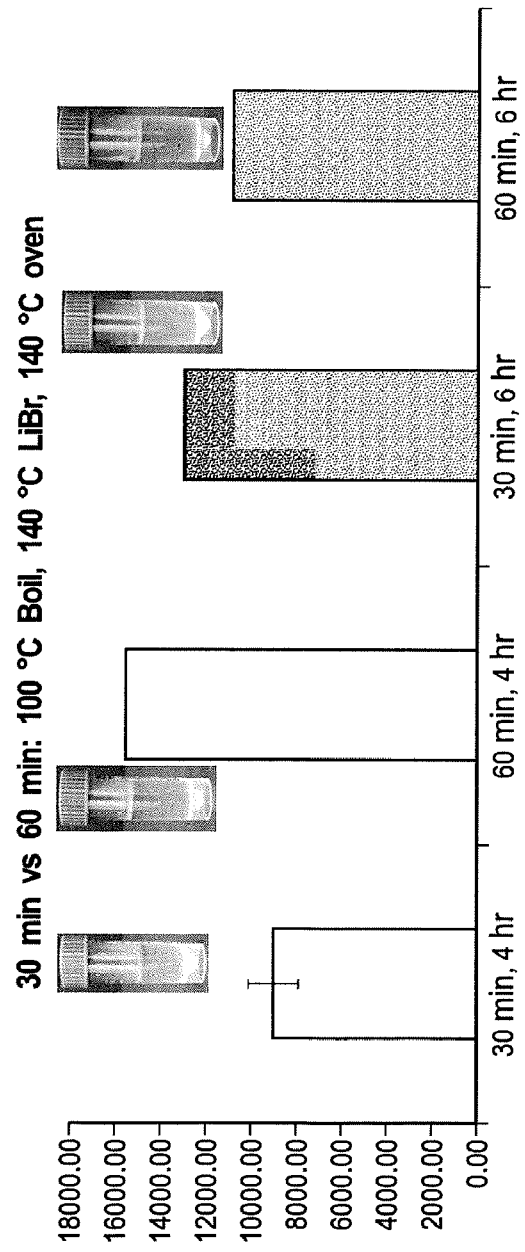


FIG. 15

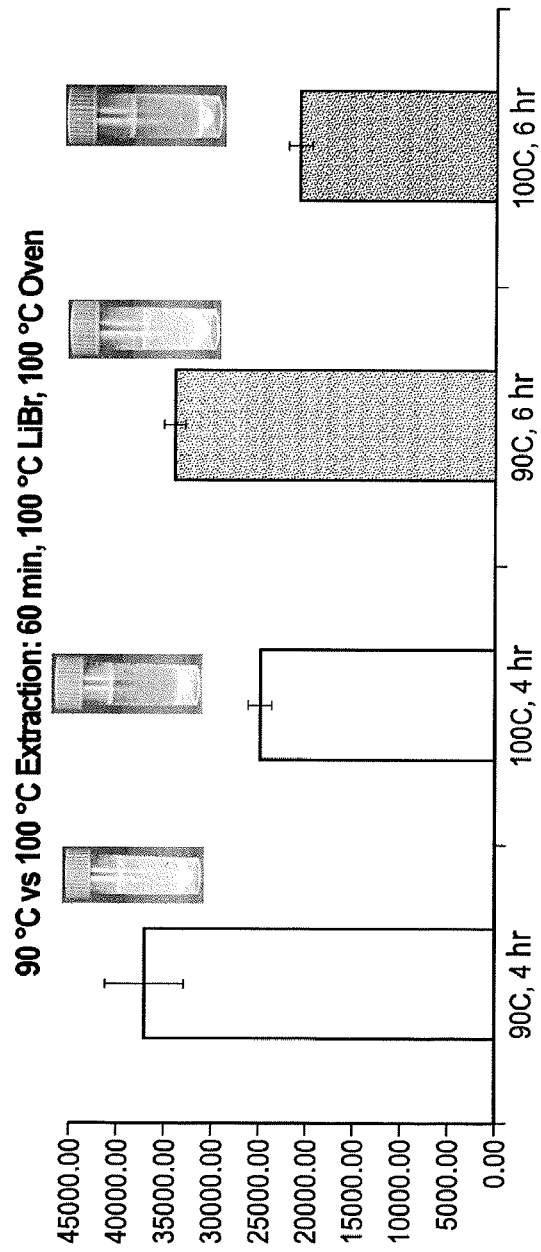


FIG. 16

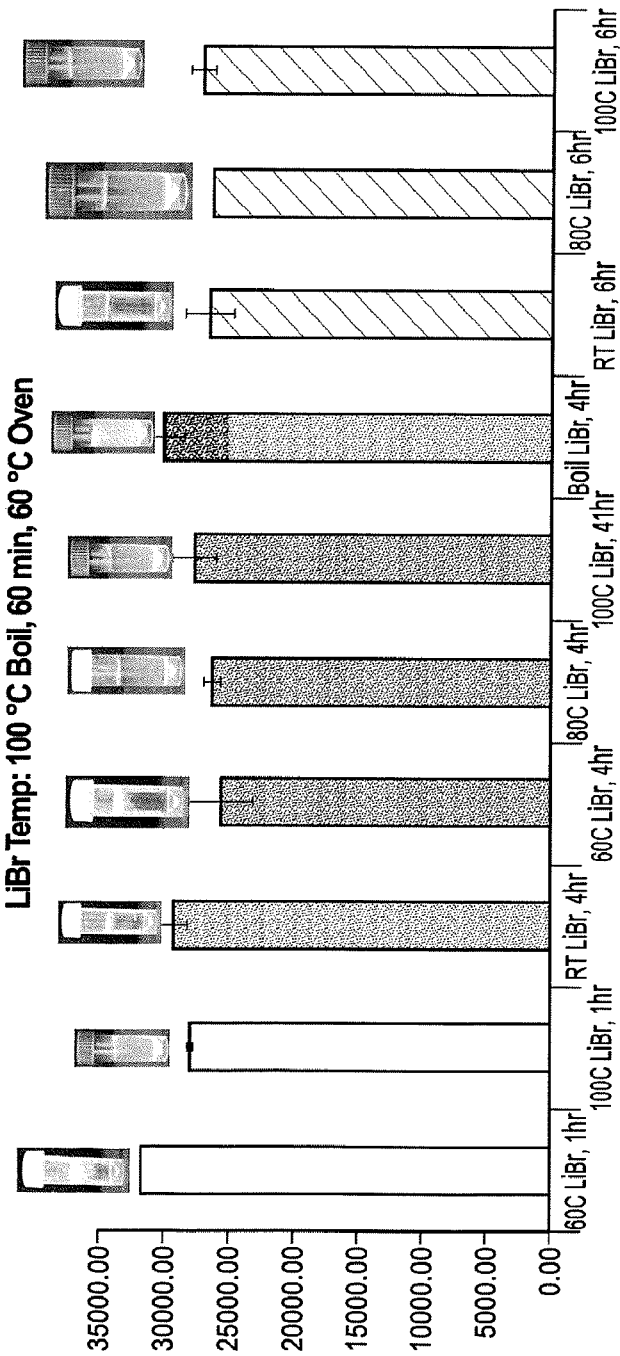


FIG. 17

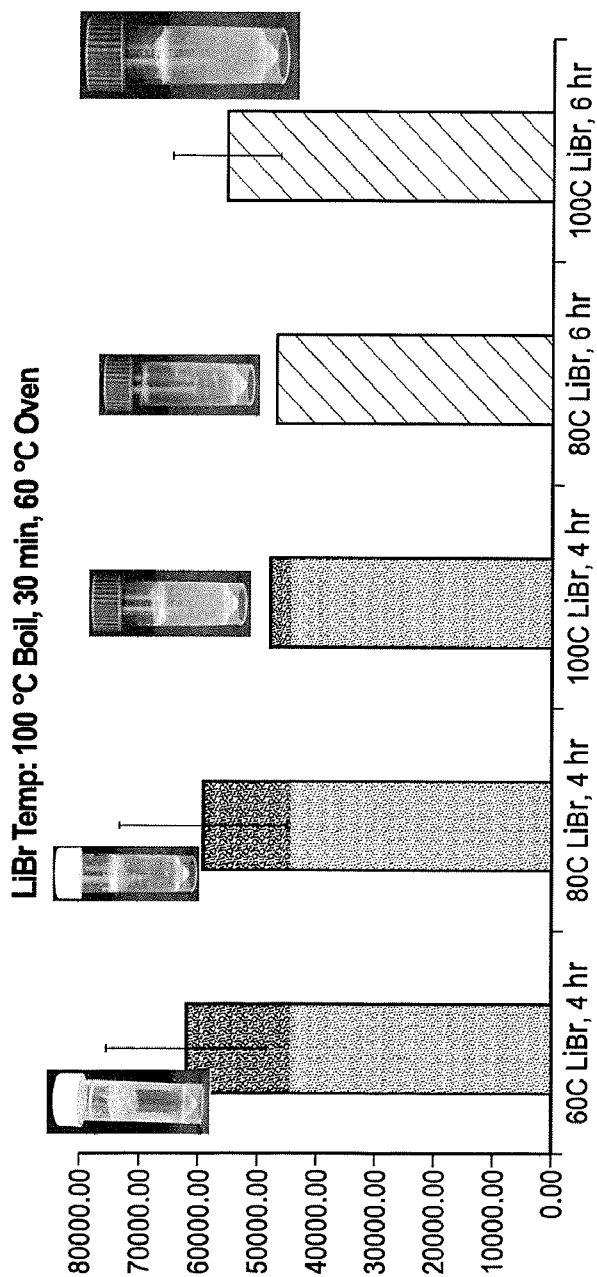


FIG. 18

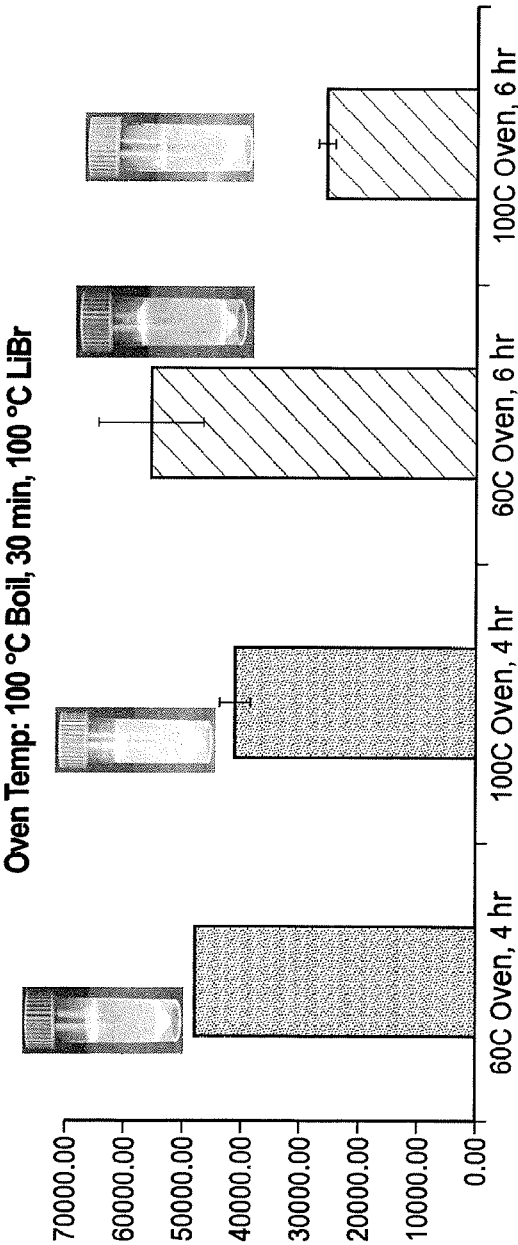


FIG. 19

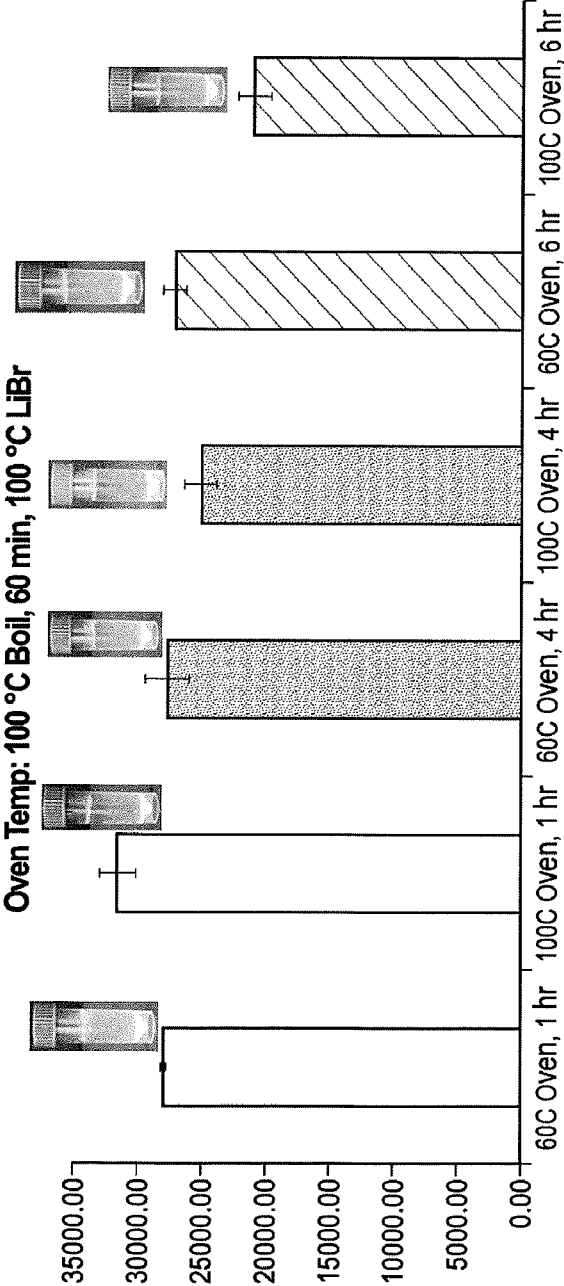


FIG. 20

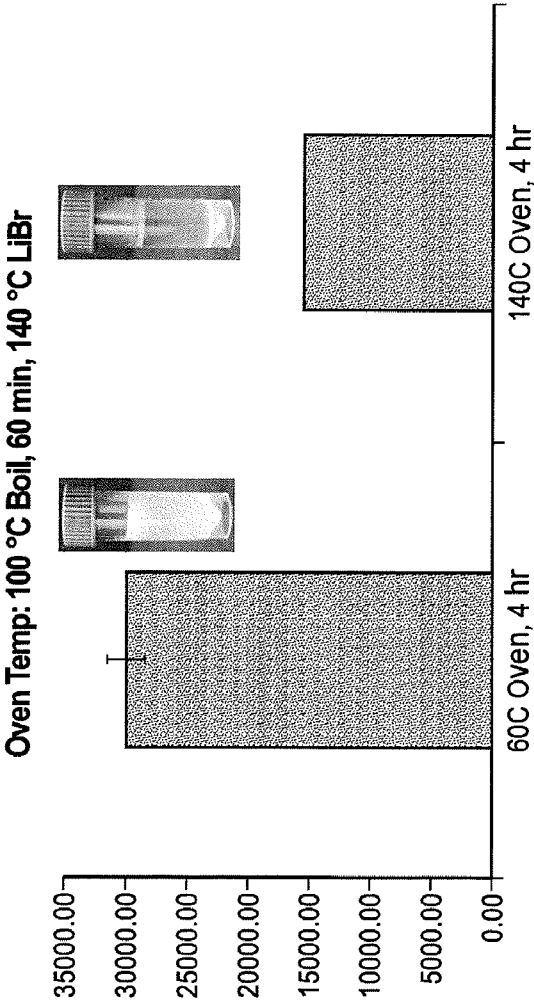


FIG. 21

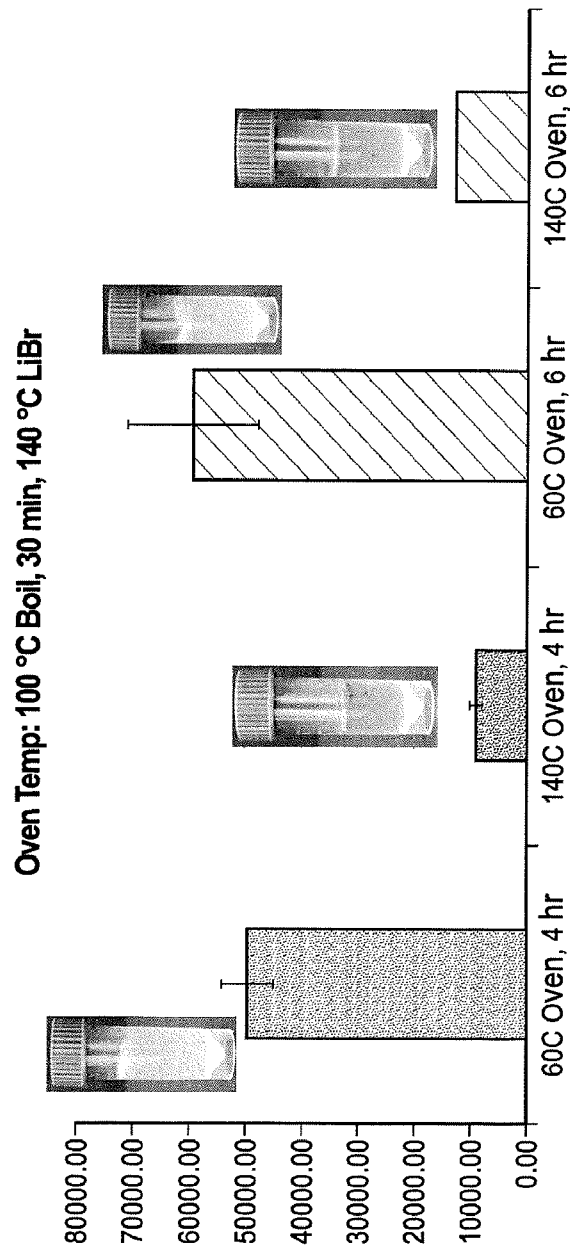


FIG. 22

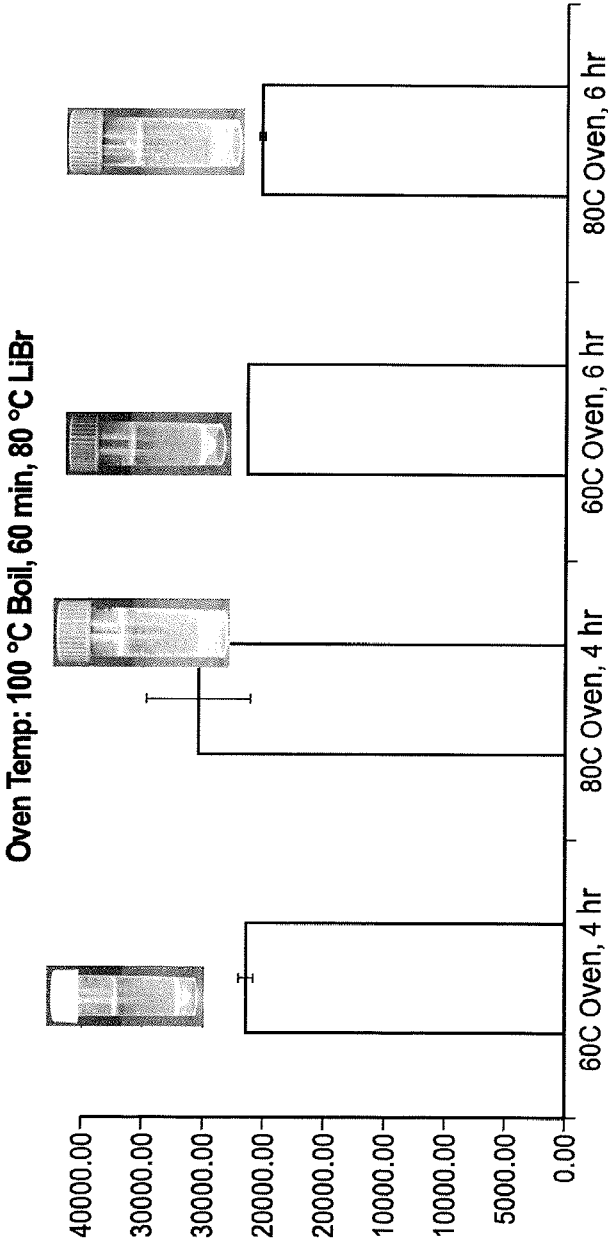


FIG. 23

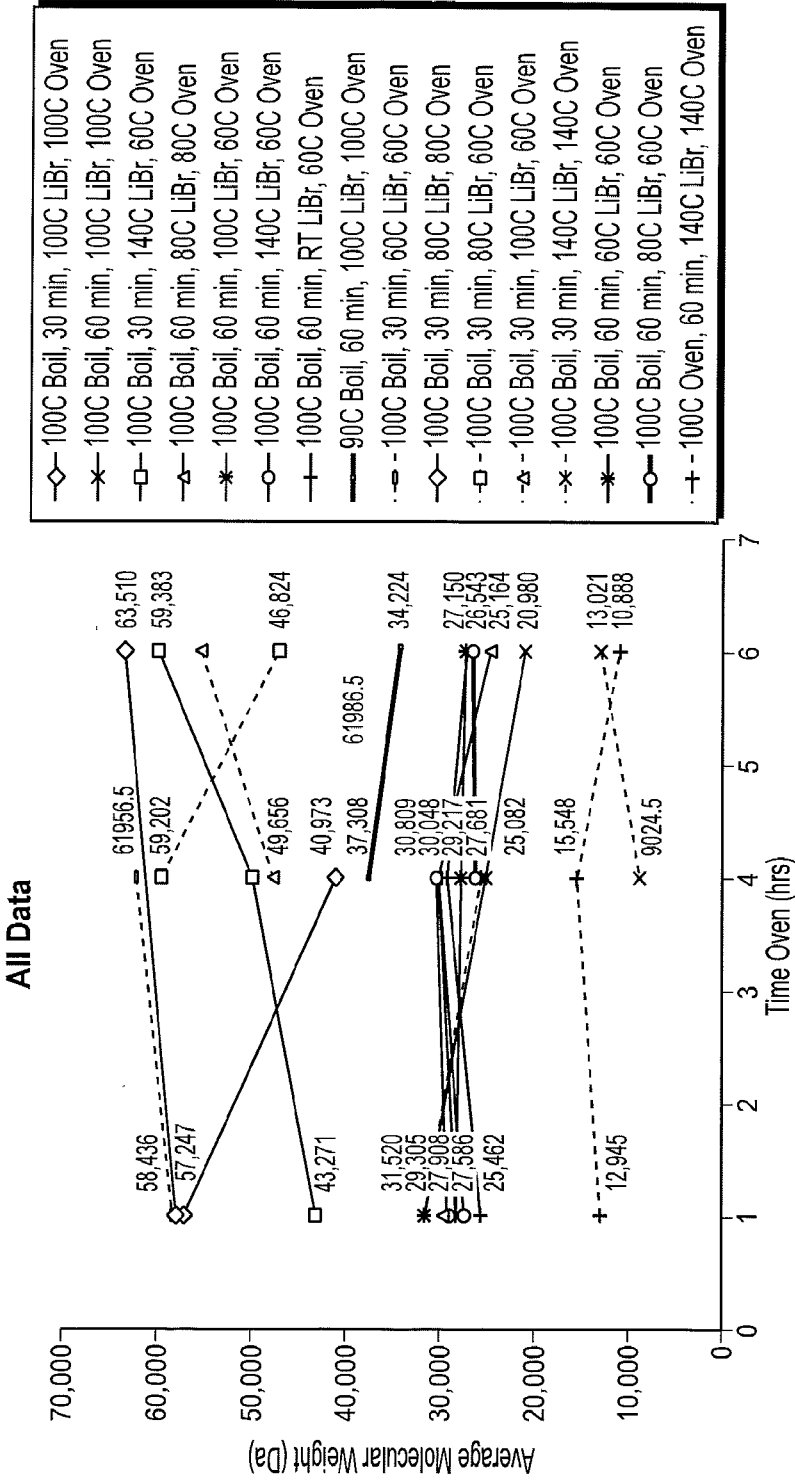


FIG. 24

Oven Temp = LiBr Temp Data: Round 2

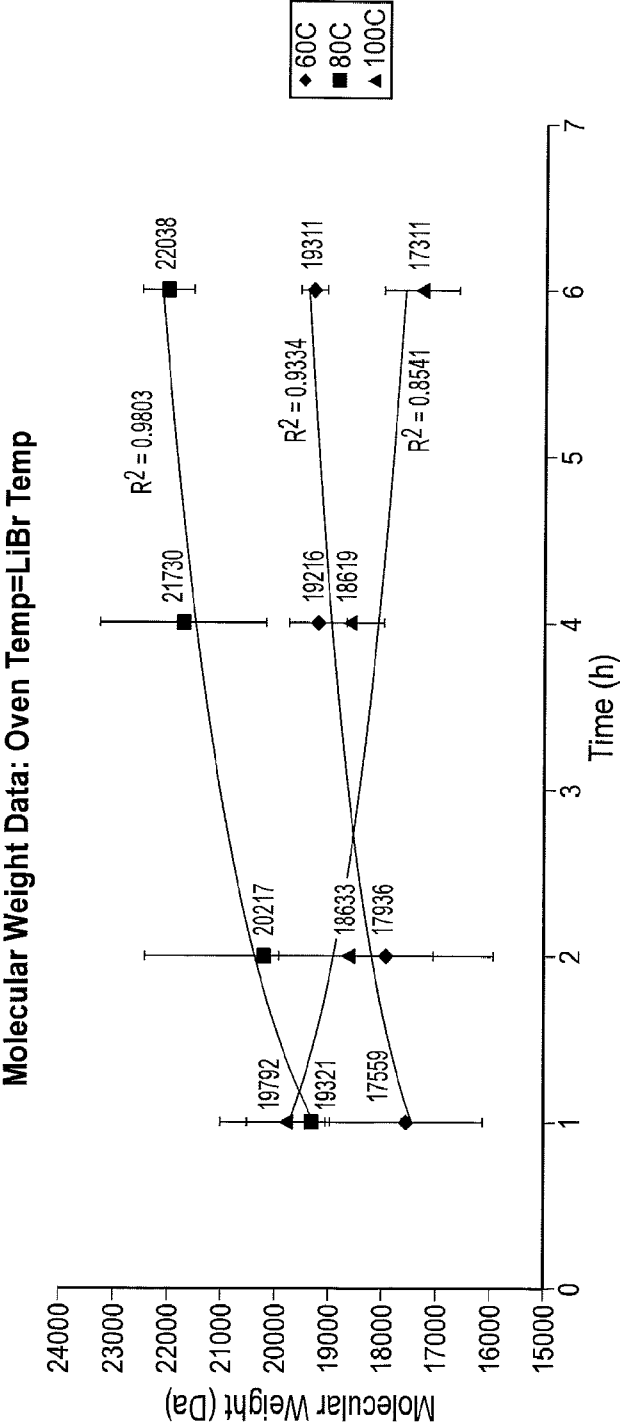


FIG. 25

26/55

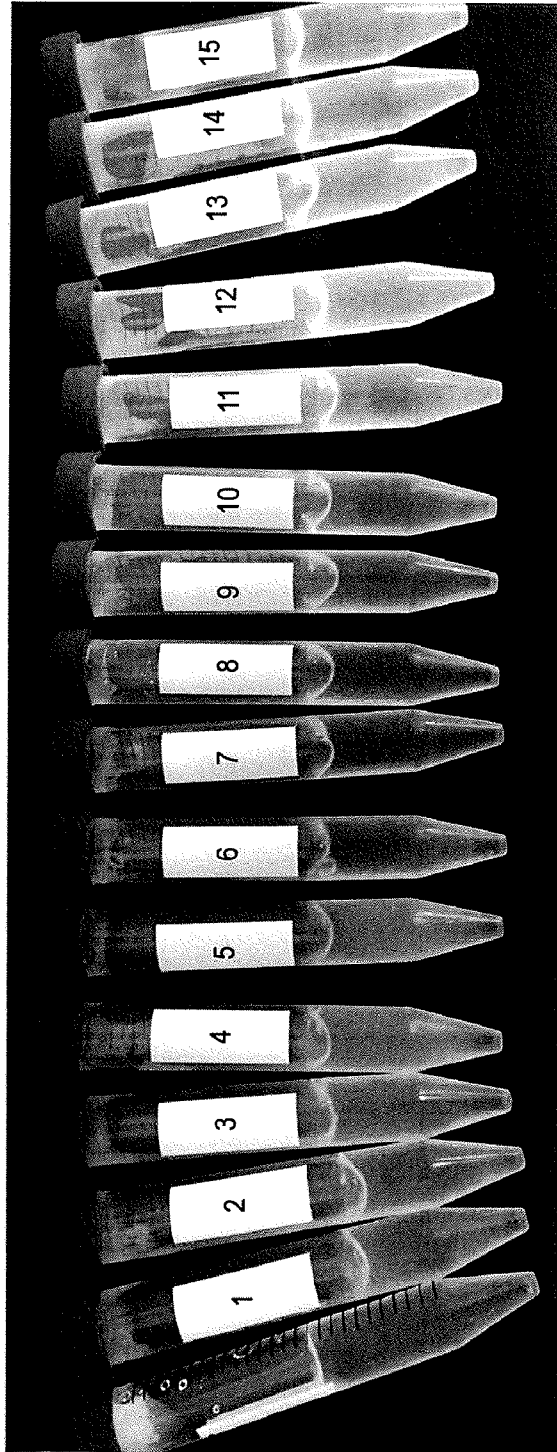


FIG. 26

27/55

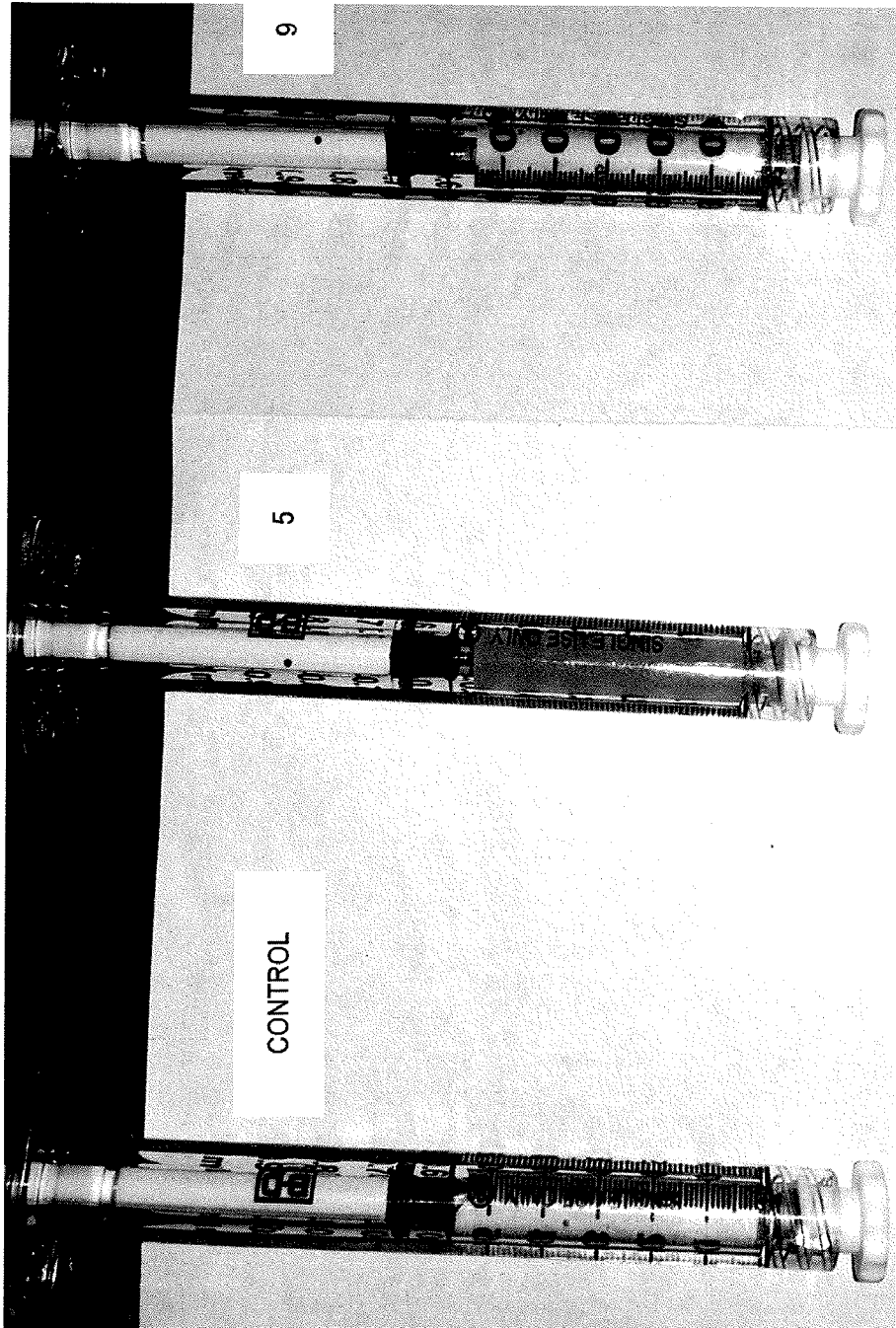


FIG. 27

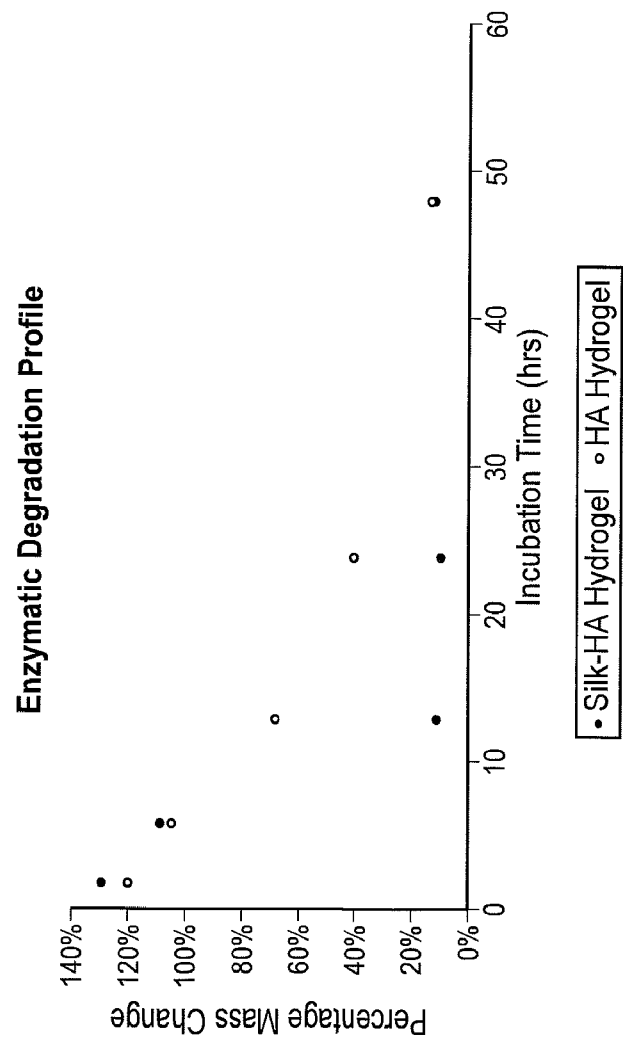


FIG. 28

29/55

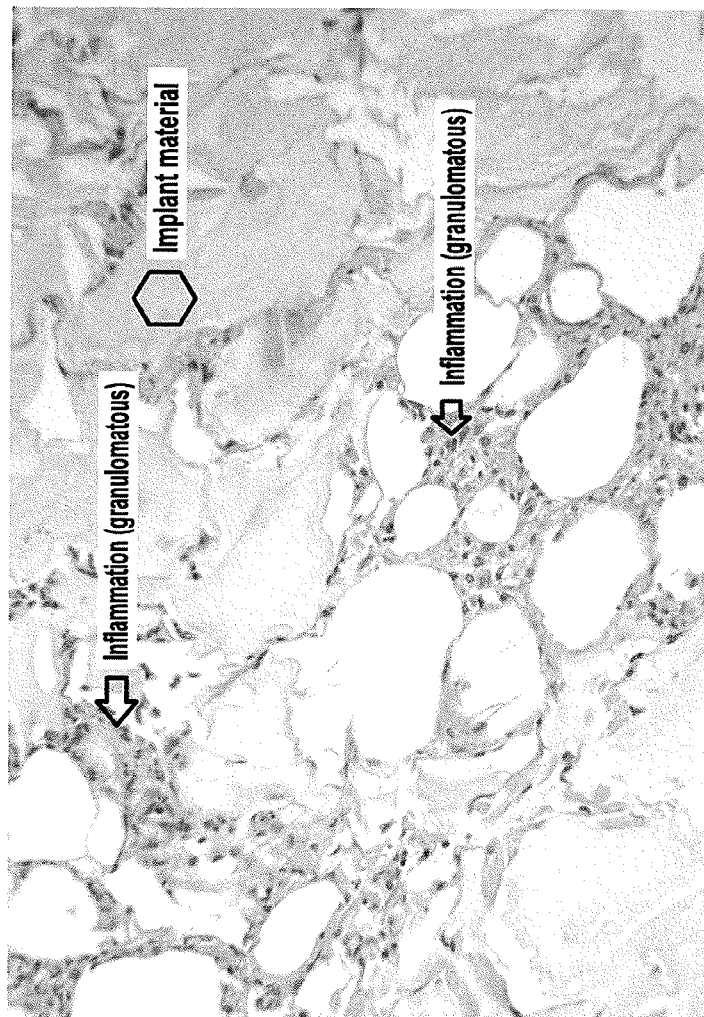


FIG. 29

30/55

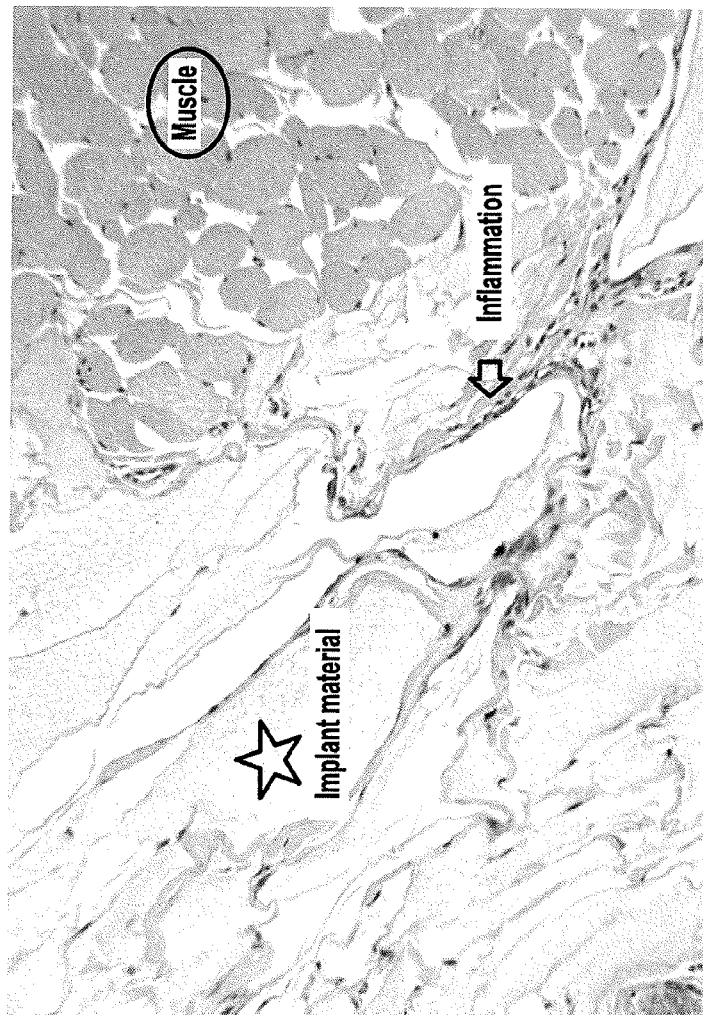


FIG. 30

31/55



FIG. 31

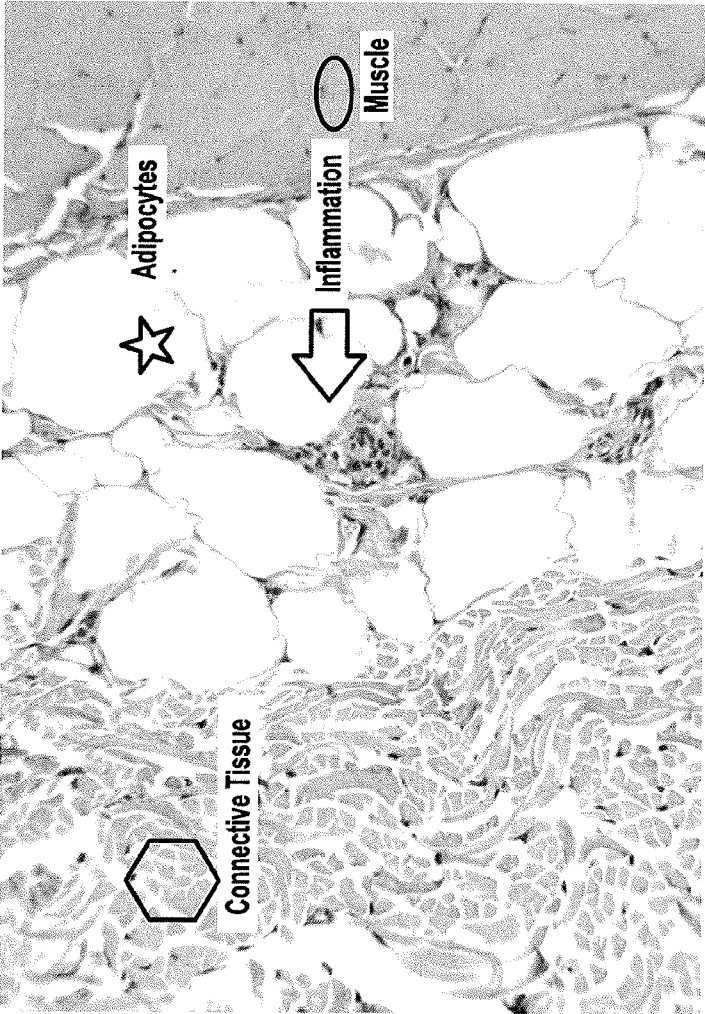


FIG. 32

33/55

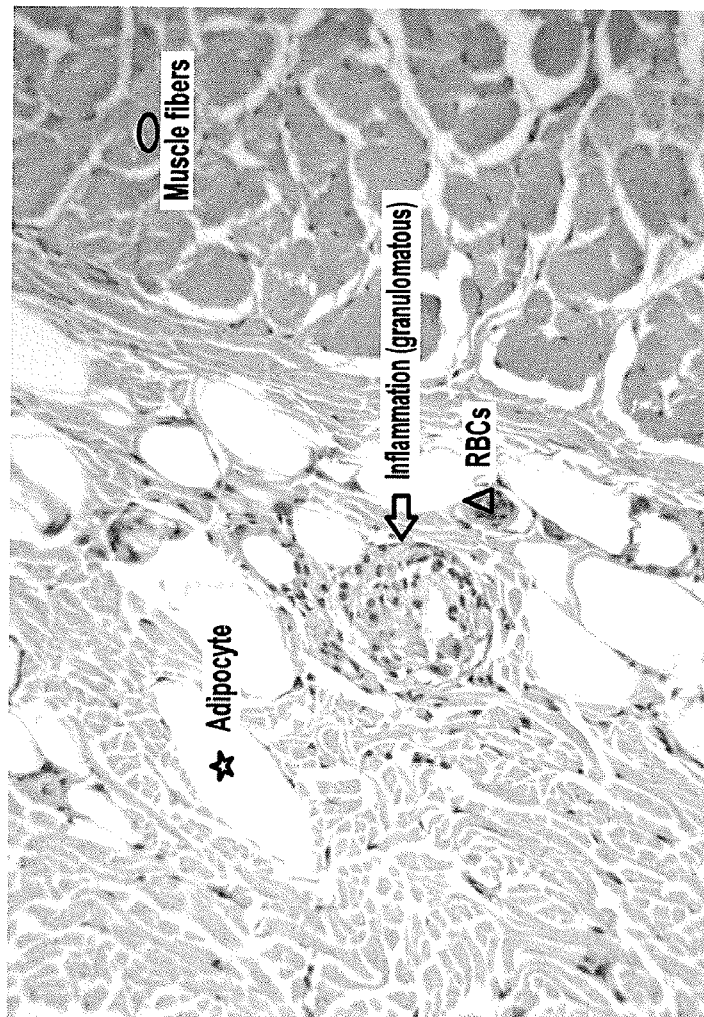


FIG. 33

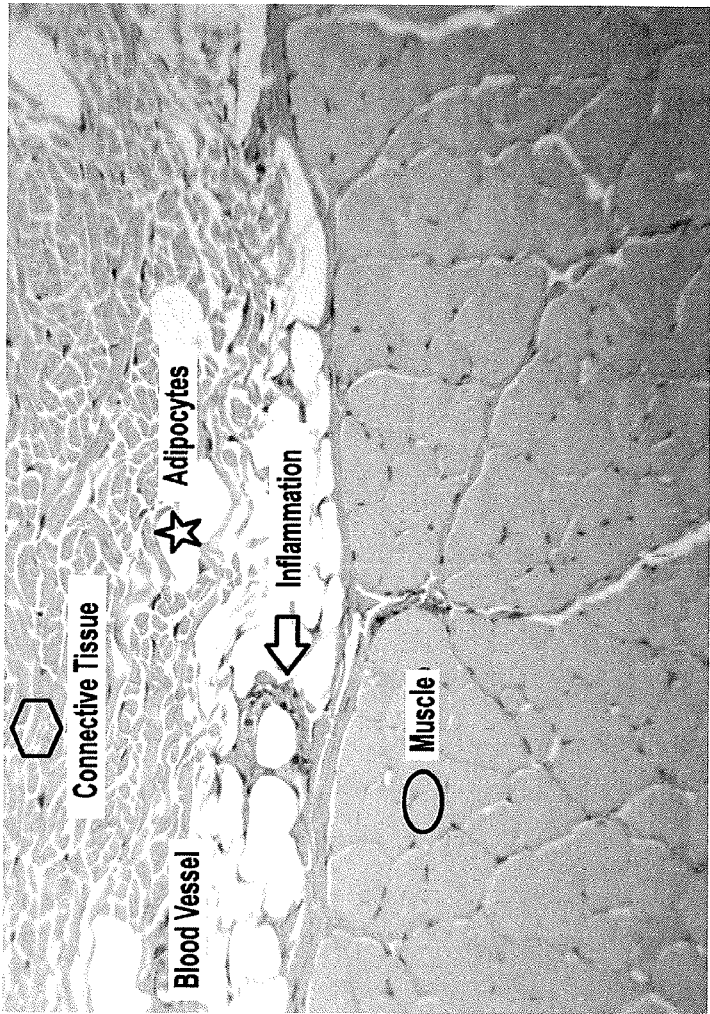


FIG. 34

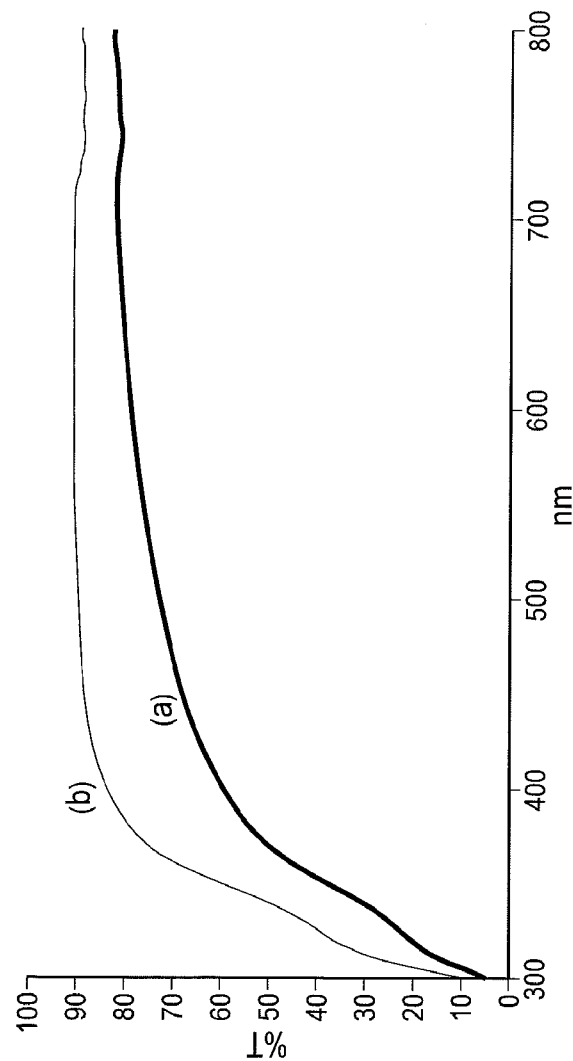


FIG. 35

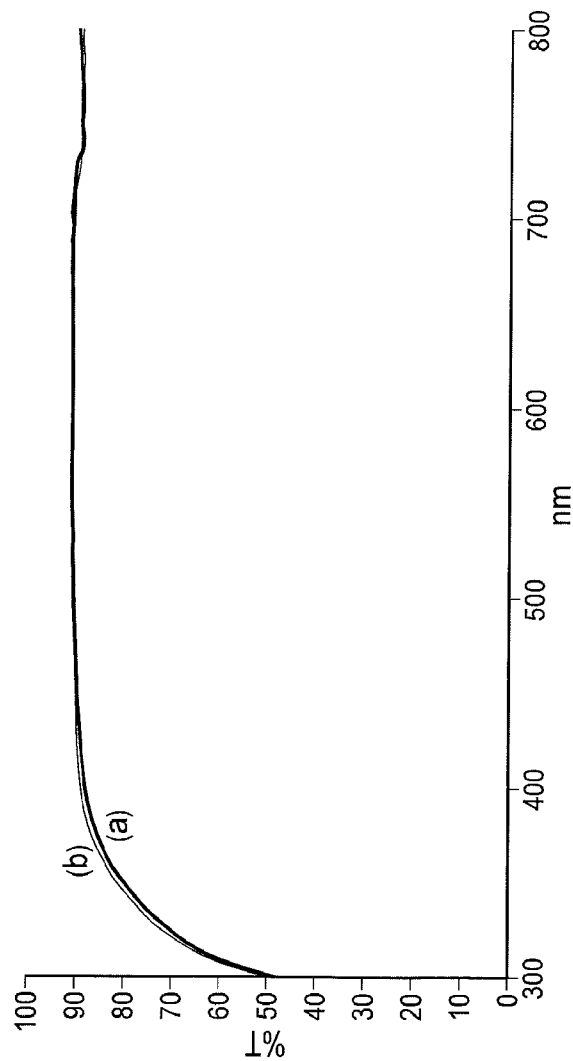


FIG. 36

37/55

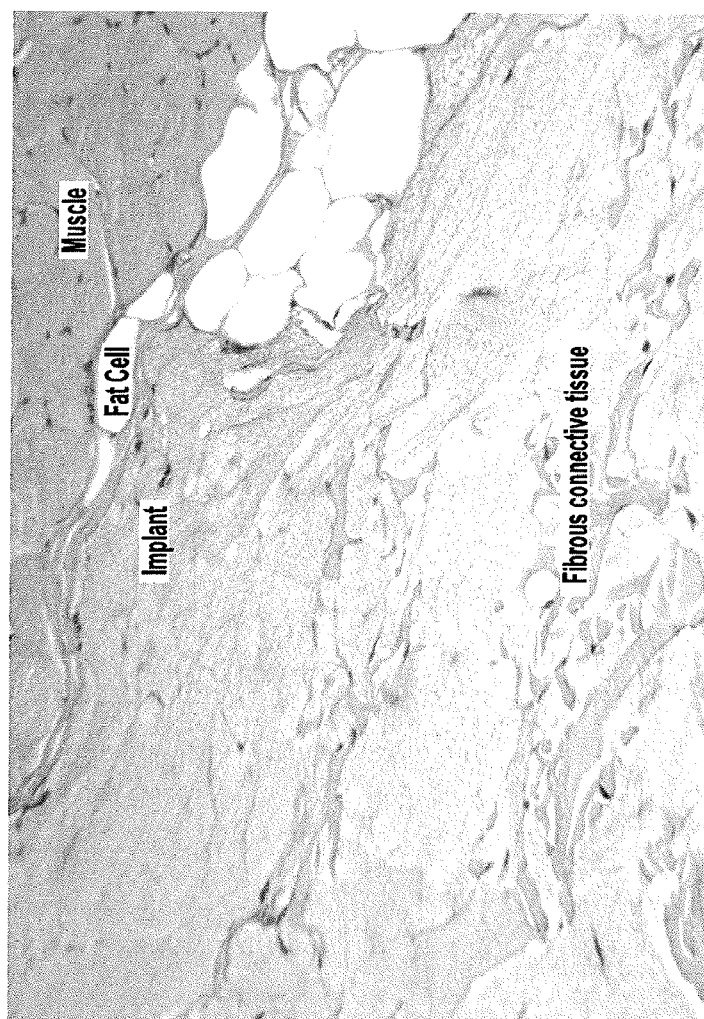


FIG. 37

38/55

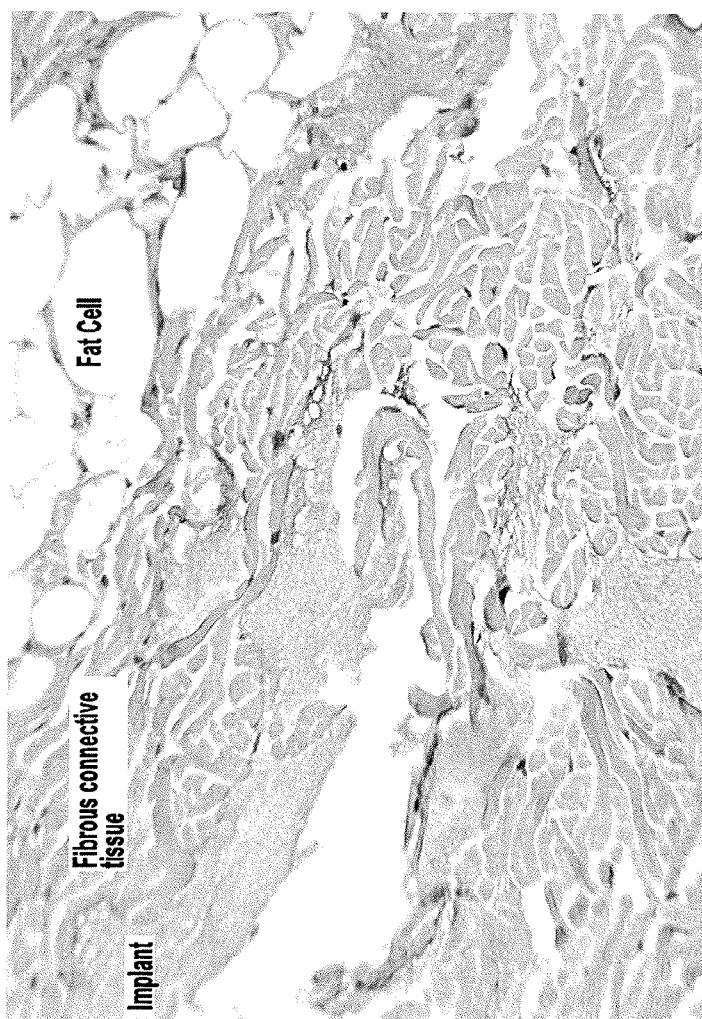


FIG. 38



FIG. 39

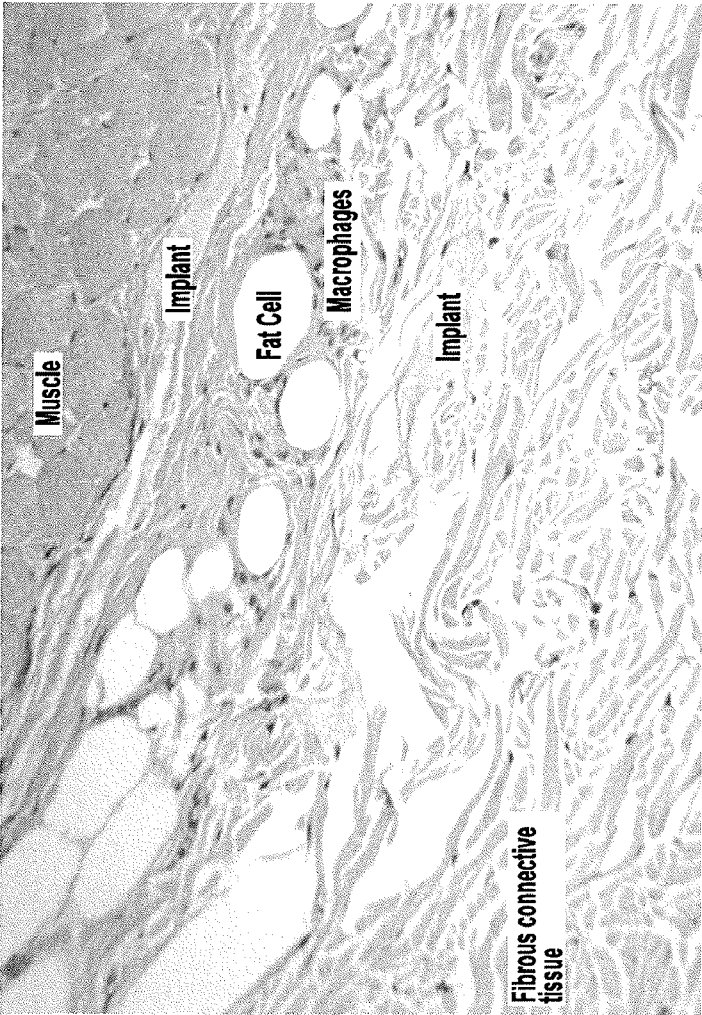


FIG. 40

41/55

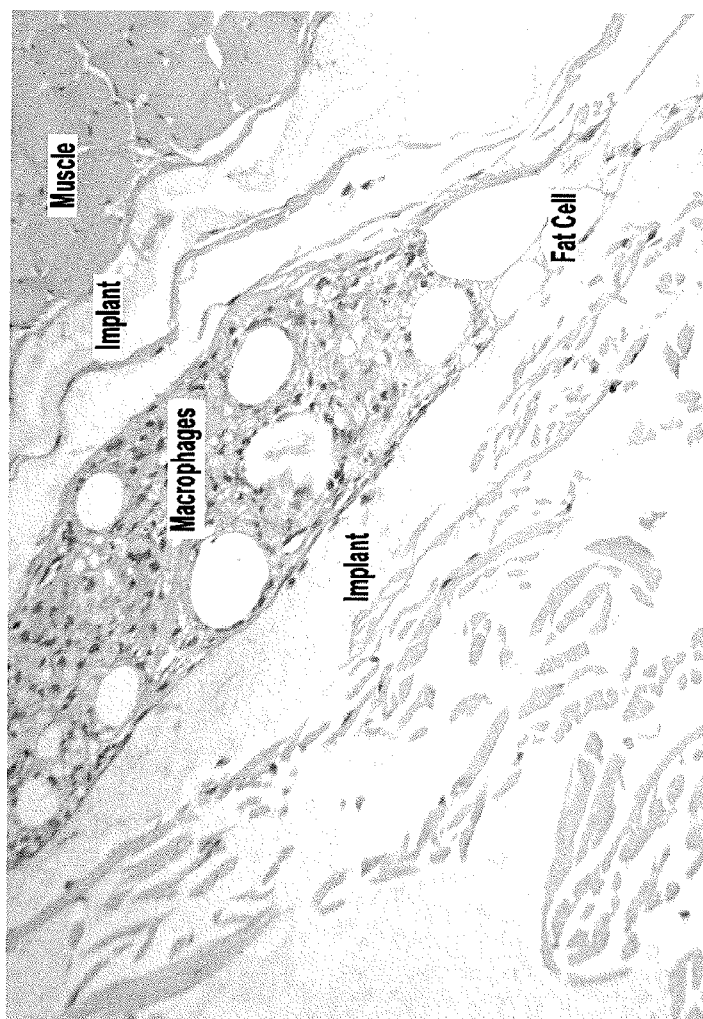


FIG. 41

42/55

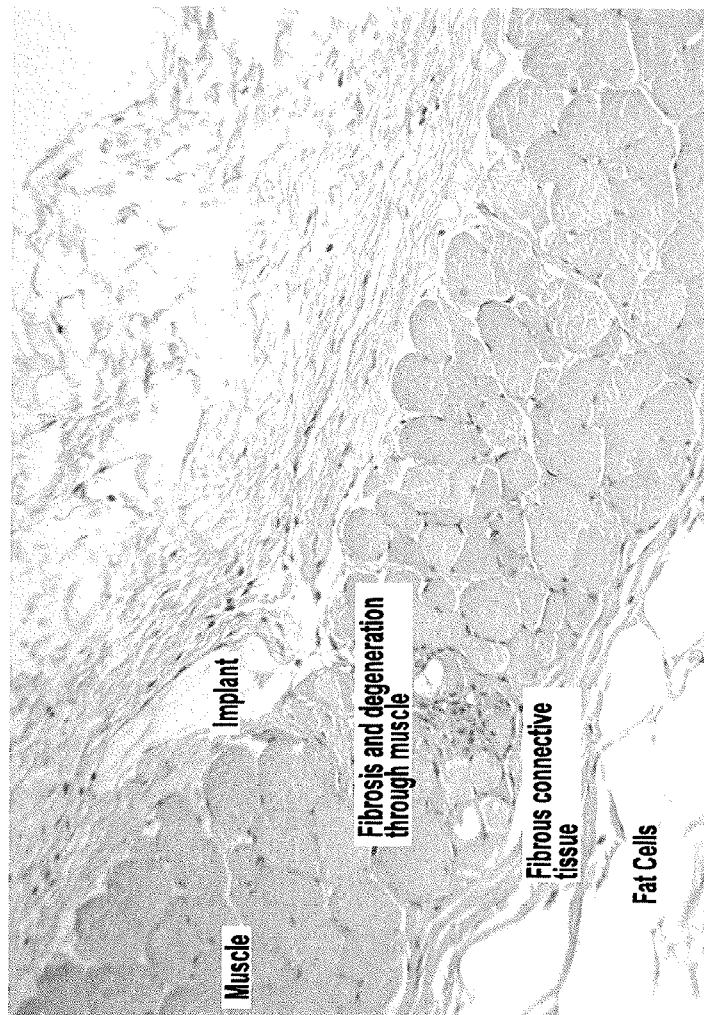


FIG. 42

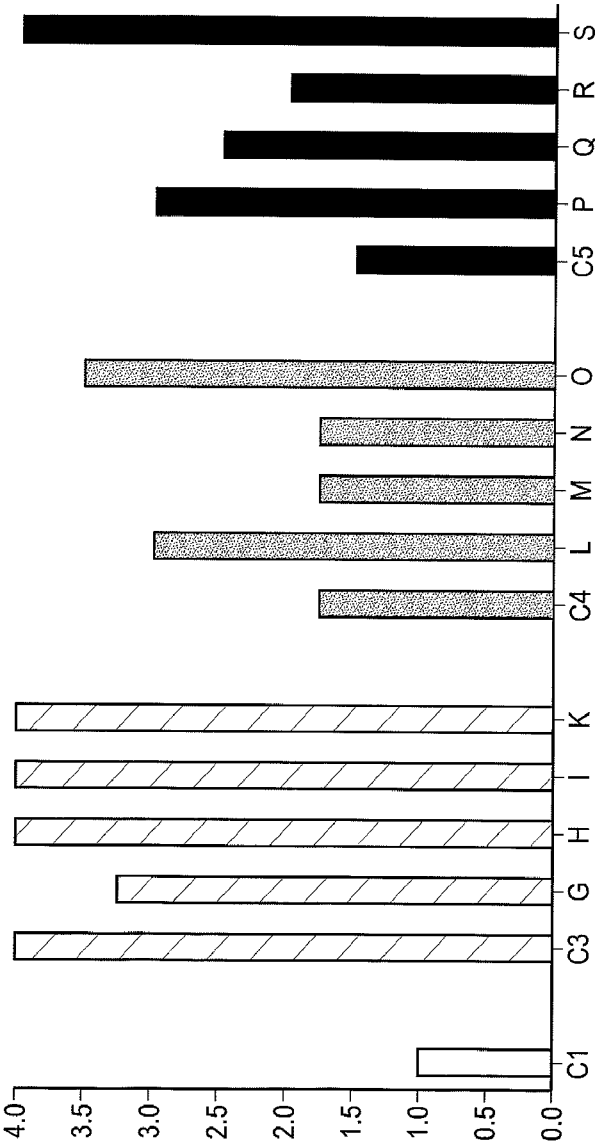


FIG. 43

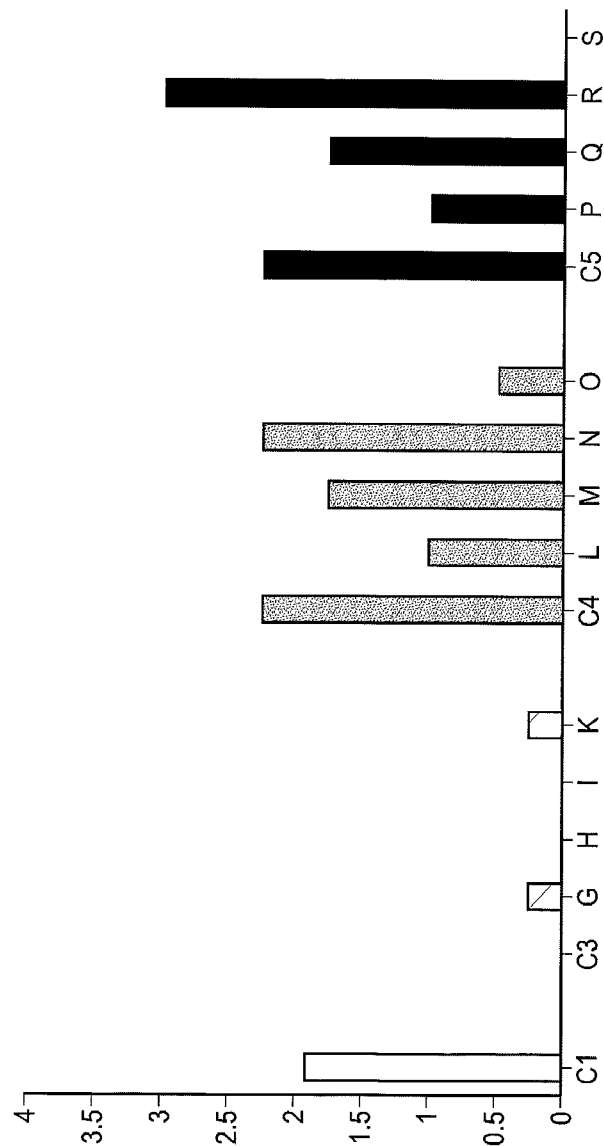


FIG. 44

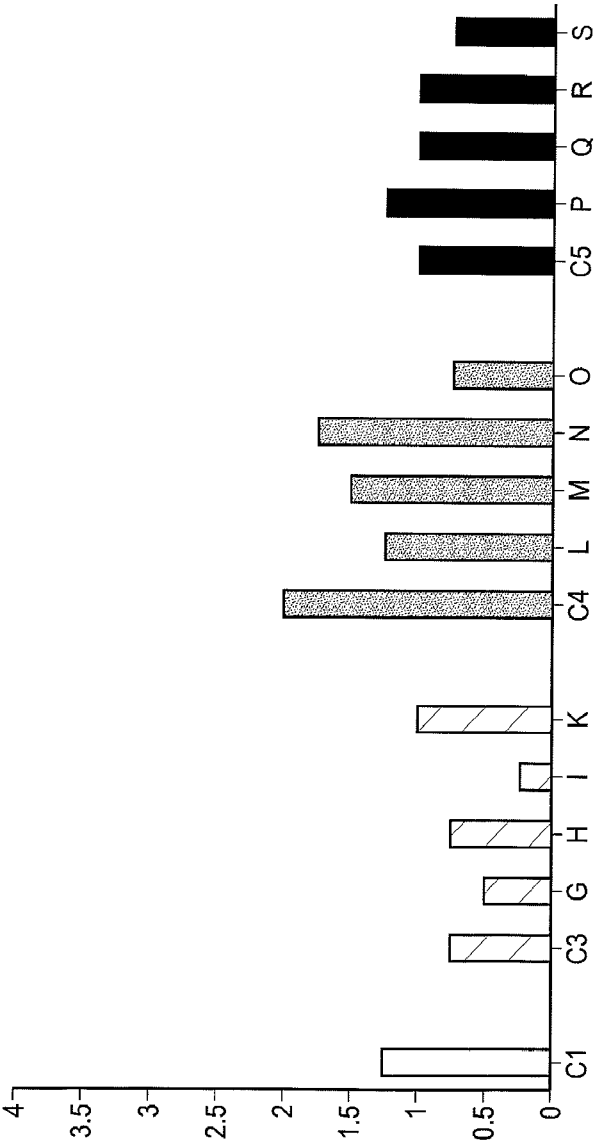


FIG. 45

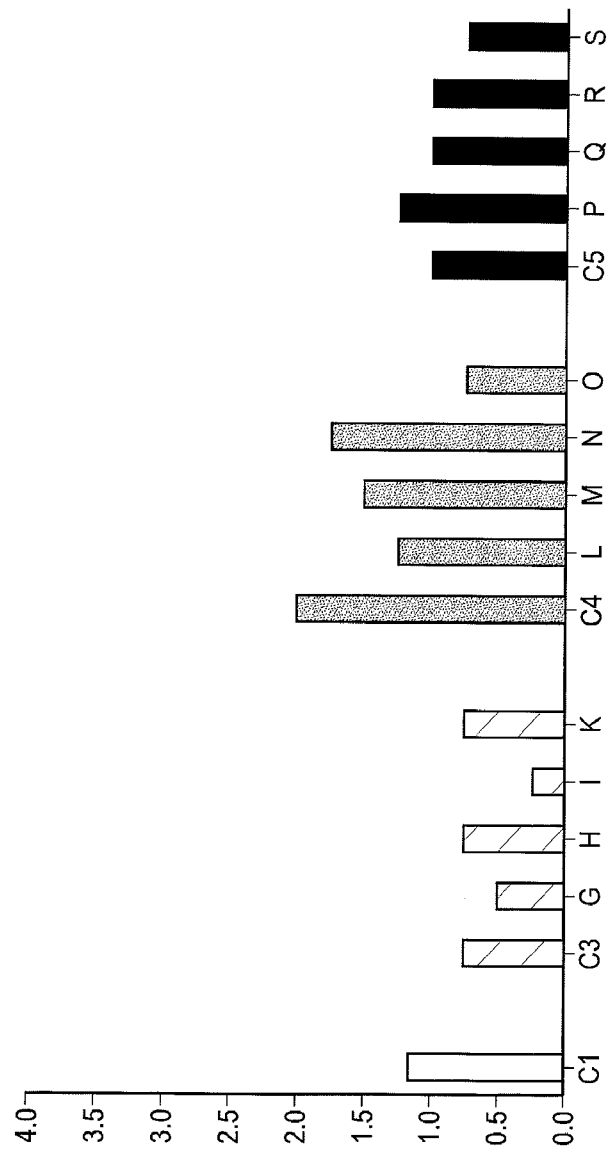


FIG. 46

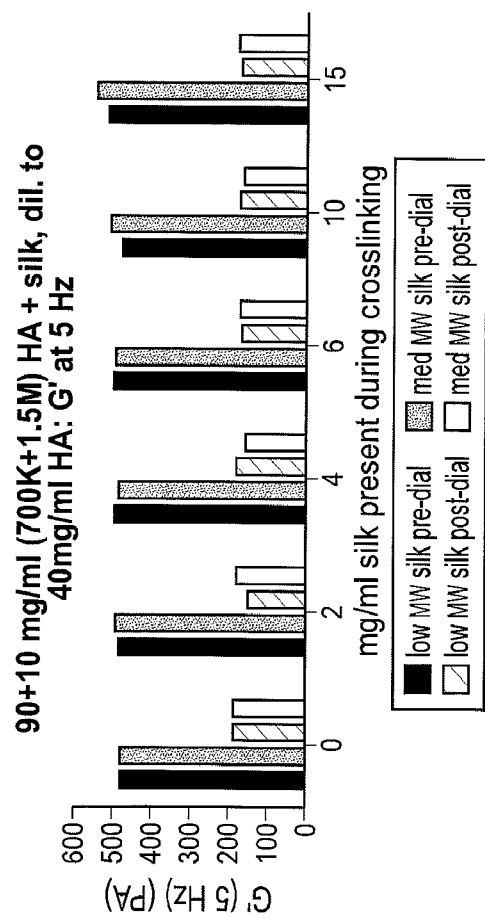


FIG. 47A

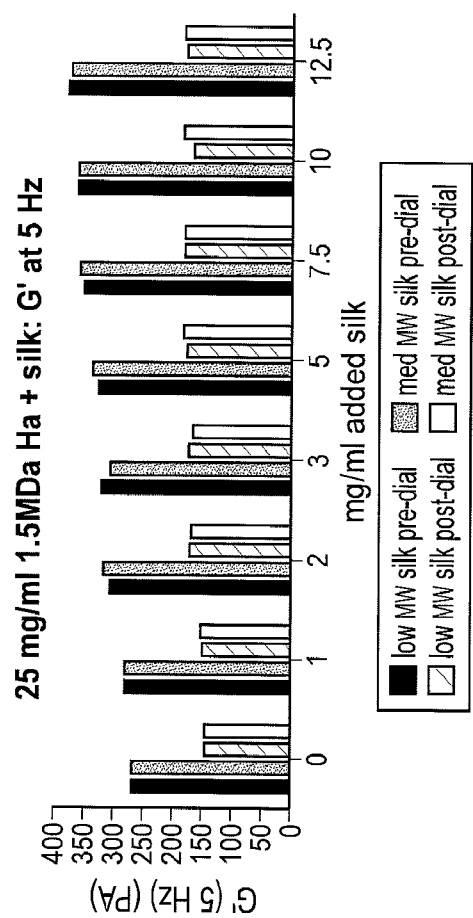


FIG. 47B

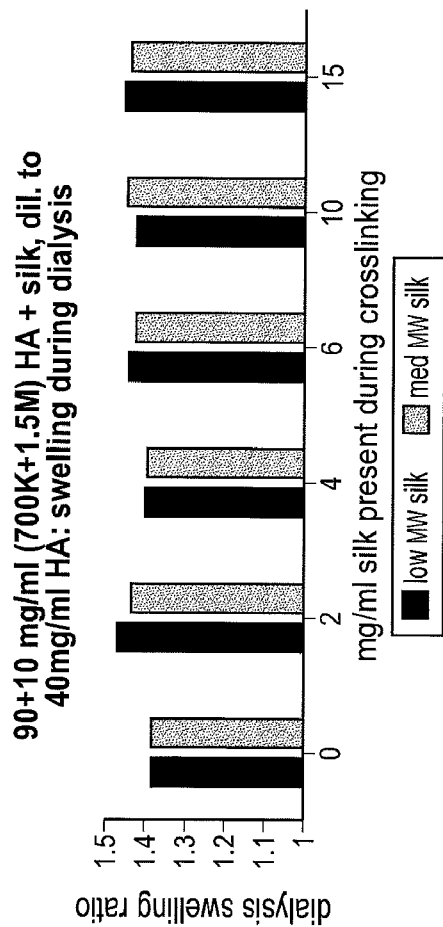


FIG. 48A

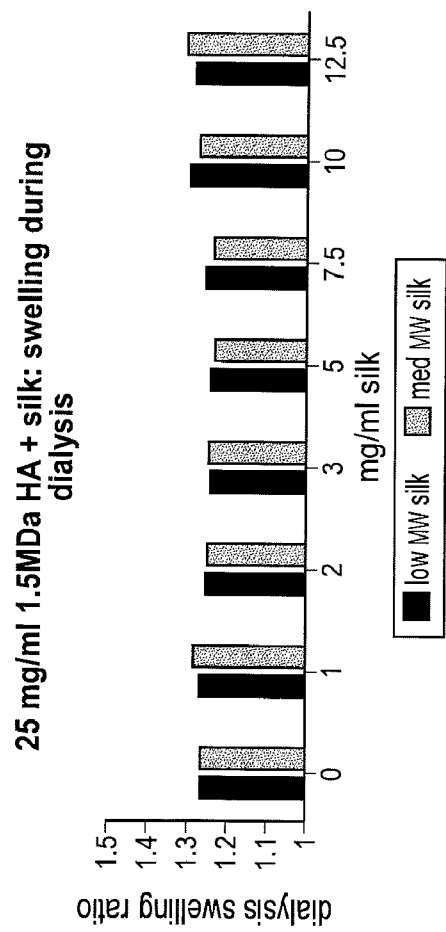
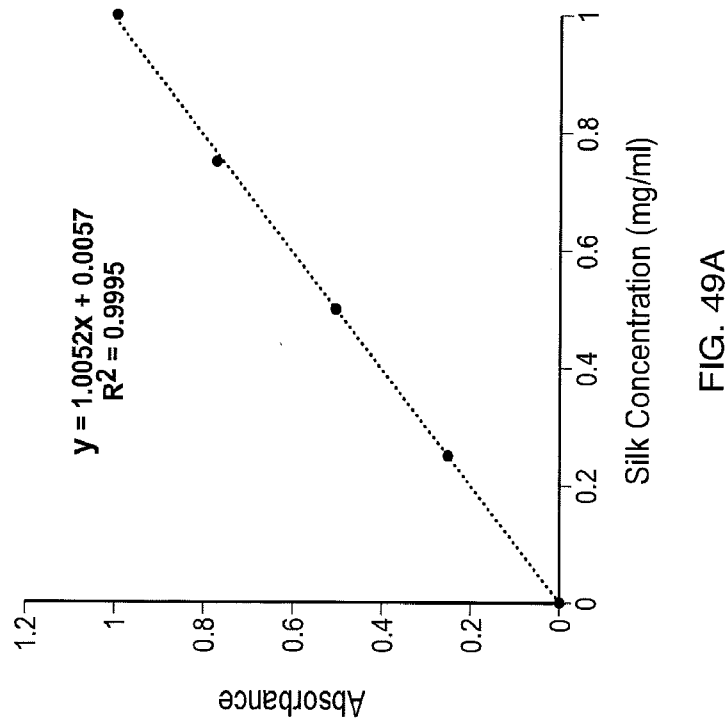


FIG. 48B



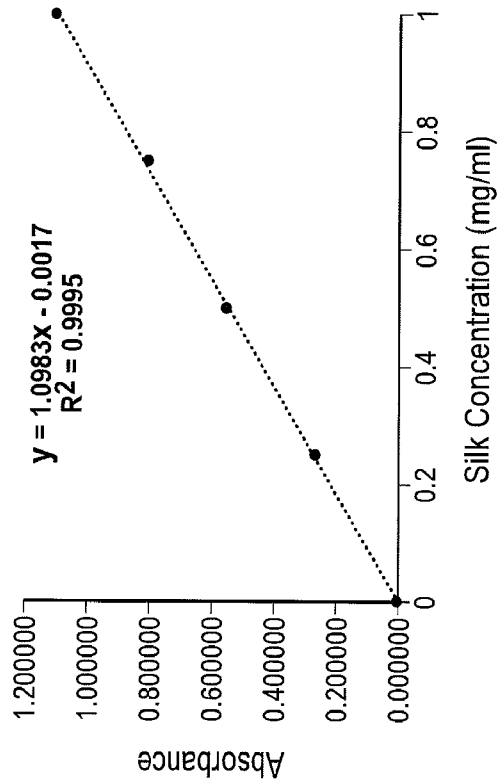


FIG. 49B

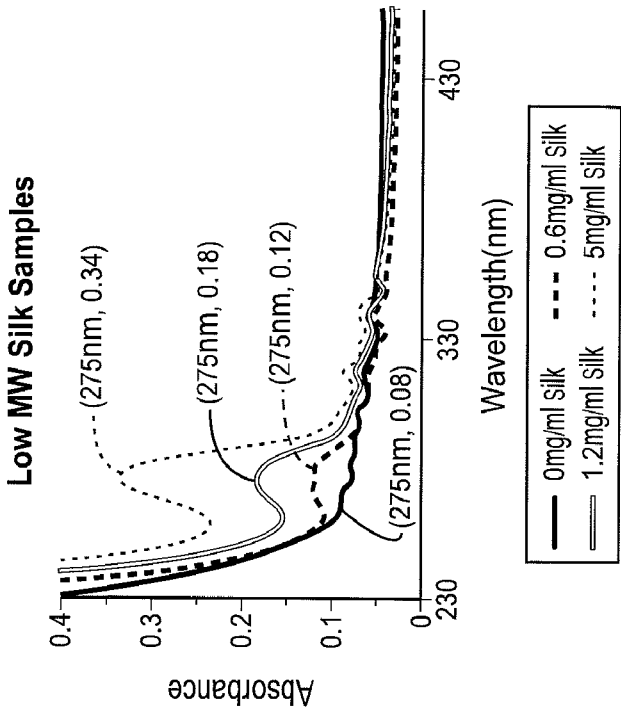


FIG. 50A

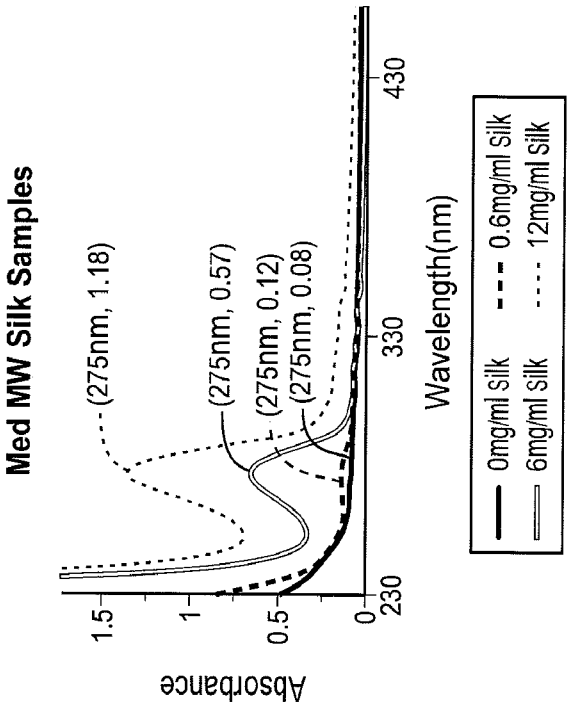


FIG. 50B

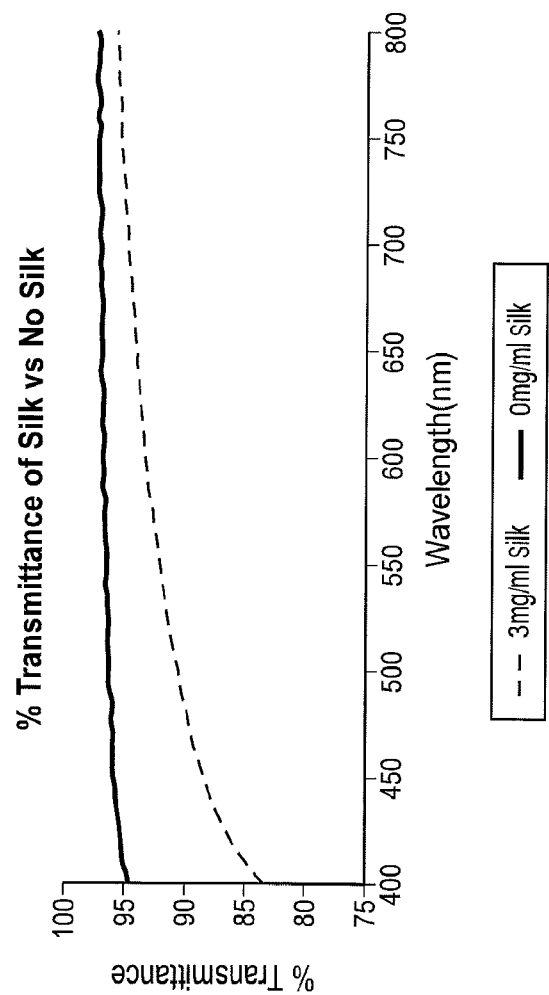


FIG. 51