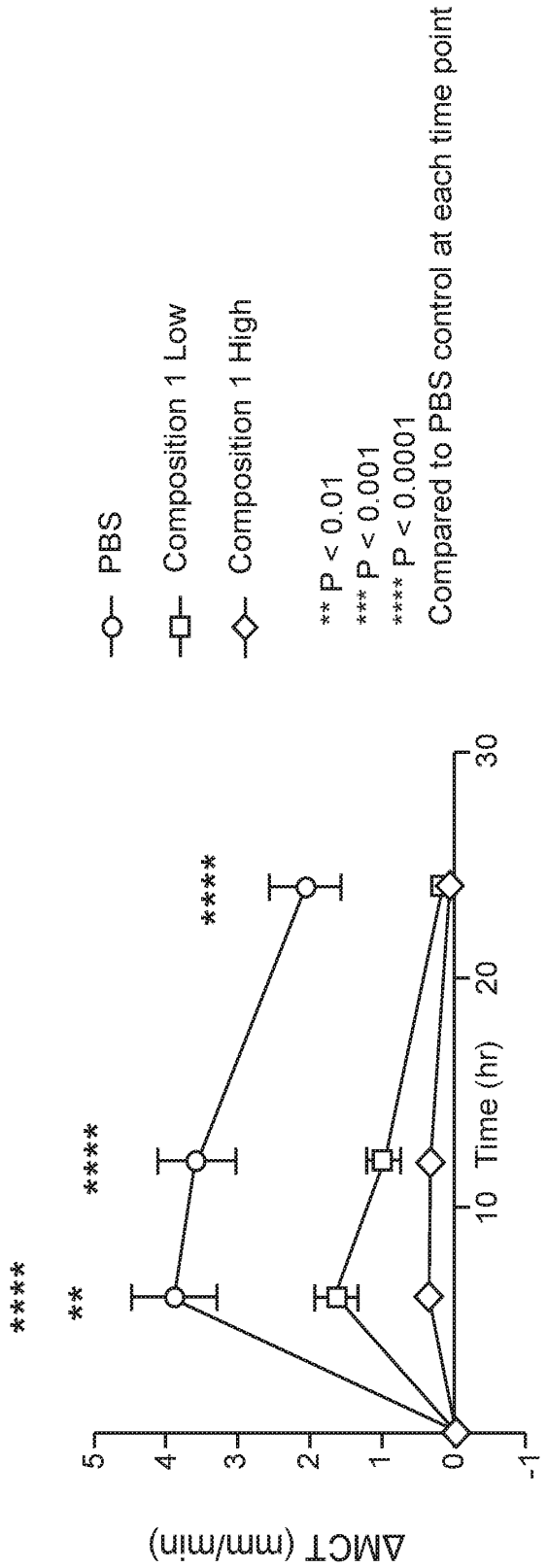

PBS
Composition 1 Low
Composition 1 High
** P < 0.01
*** P < 0.001
**** P < 0.0001
Compared to PBS control at each time point
ΔMCT (mm/min)
5
4
3
2
1
0
-1
10
20
30
Time (hr)
*****
**
****
****

FIG. 1

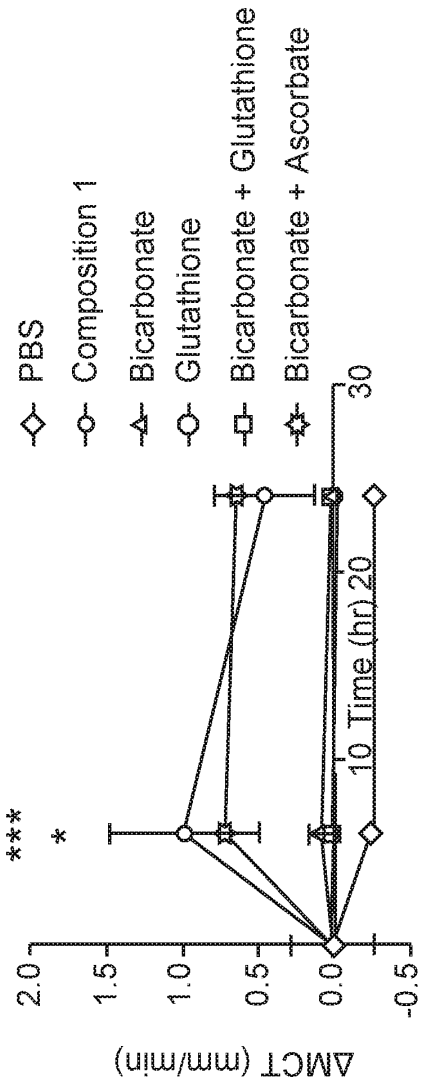

PBS
Composition 1
Bicarbonate
Glutathione
Bicarbonate + Glutathione
Bicarbonate + Ascorbate
***
*
2.0
1.5
1.0
0.5
0.0
-0.5
10
20
30
Time (hr)
ΔMCT (mm/min)

FIG. 2

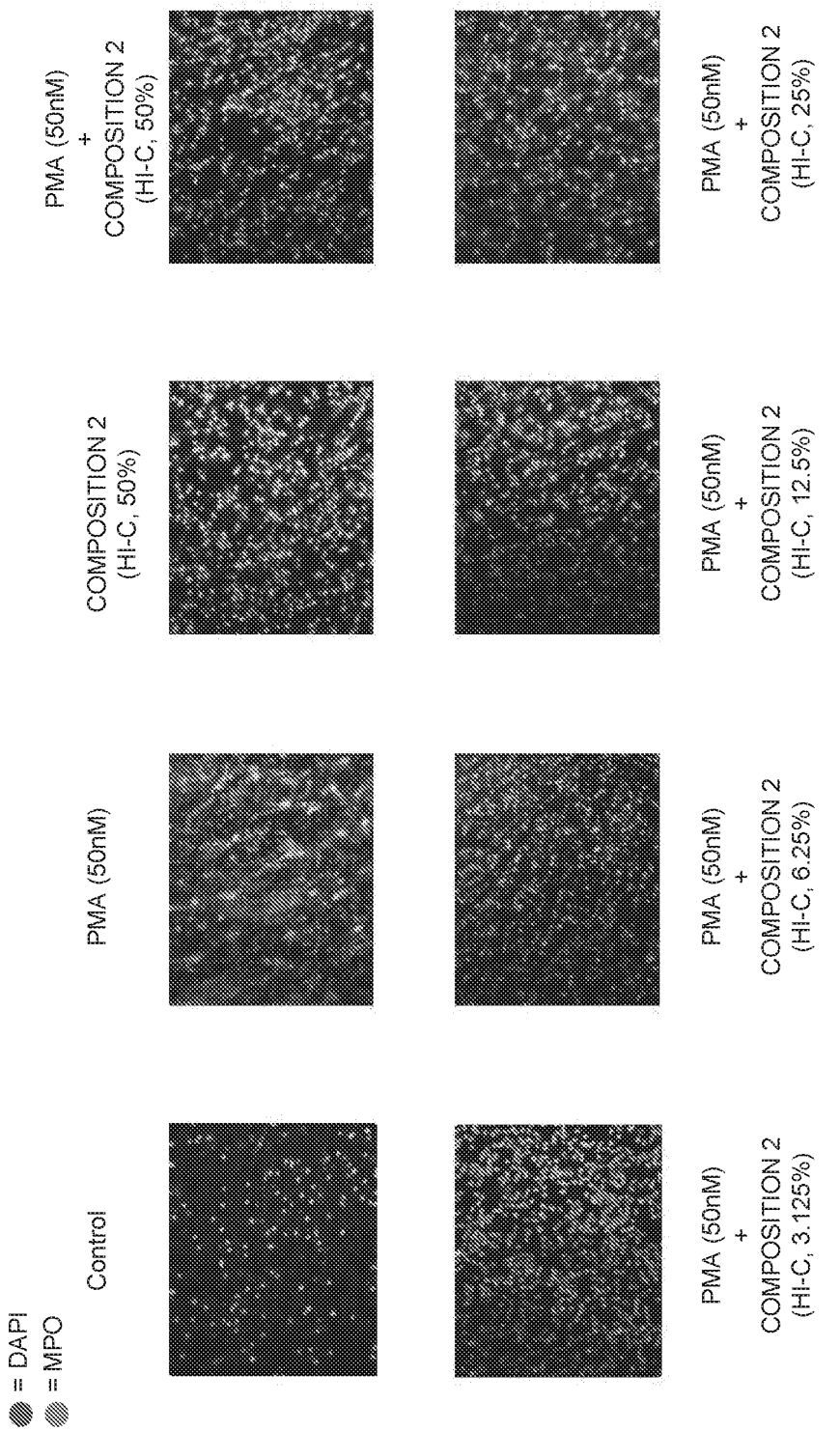

= DAPI
= MPO
Control
PMA (50nM)
COMPOSITION 2 (HI-C, 50%)
PMA (50nM) + COMPOSITION 2 (HI-C, 50%)
PMA (50nM) + COMPOSITION 2 (HI-C, 6.25%)
PMA (50nM) + COMPOSITION 2 (HI-C, 12.5%)
PMA (50nM) + COMPOSITION 2 (HI-C, 25%)
PMA (50nM) + COMPOSITION 2 (HI-C, 3.125%)

FIG. 3

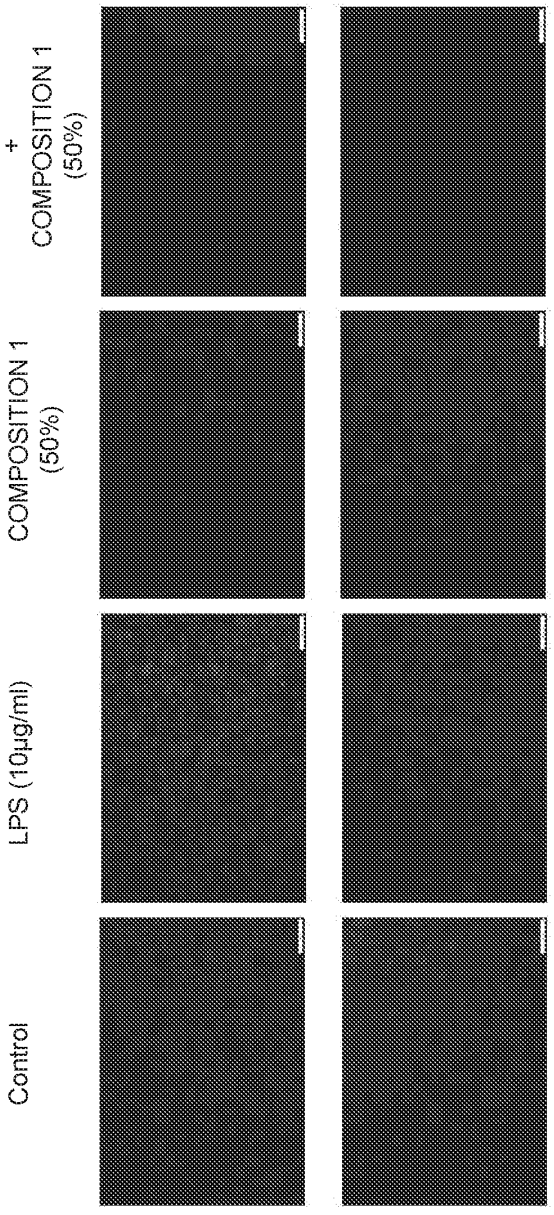

Control
LPS (10µg/ml)
LPS (10µg/ml) + COMPOSITION 1 (3.125%)
LPS (10µg/ml) + COMPOSITION 1 (6.25%)
COMPOSITION 1 (50%)
LPS (10µg/ml) + COMPOSITION 1 (12.5%)
LPS (10µg/ml) + COMPOSITION 1 (25%)
LPS (10µg/ml) + COMPOSITION 1 (50%)

FIG. 4

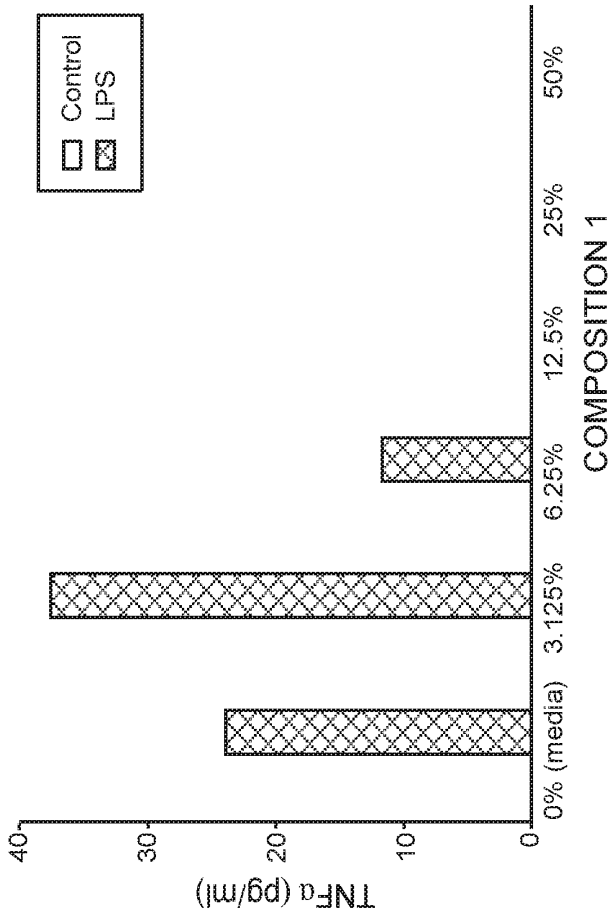

Control
LPS
TNFα (pg/ml)
0
10
20
30
40
0% (media)
3.125%
6.25%
12.5%
25%
50%
COMPOSITION 1

FIG. 5A

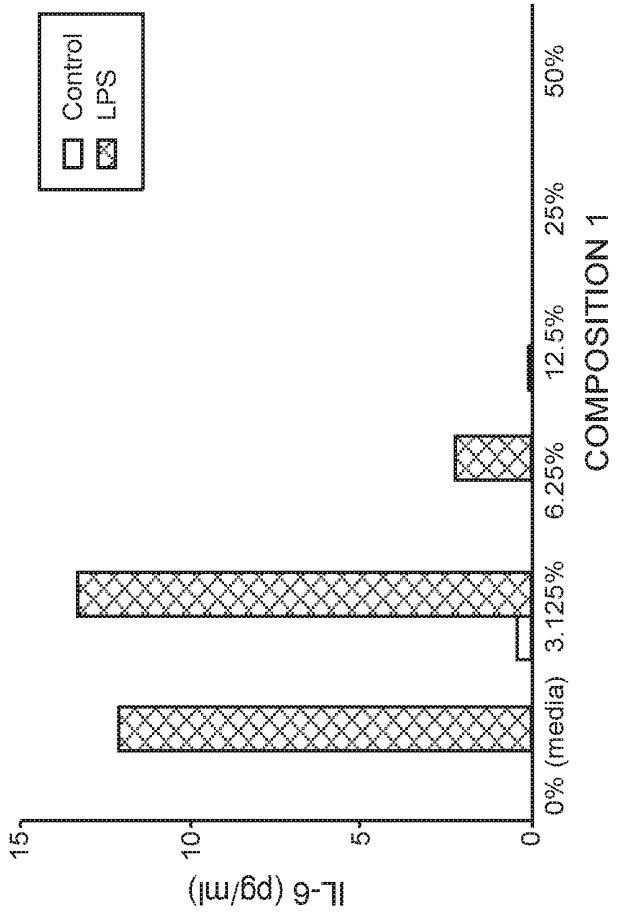
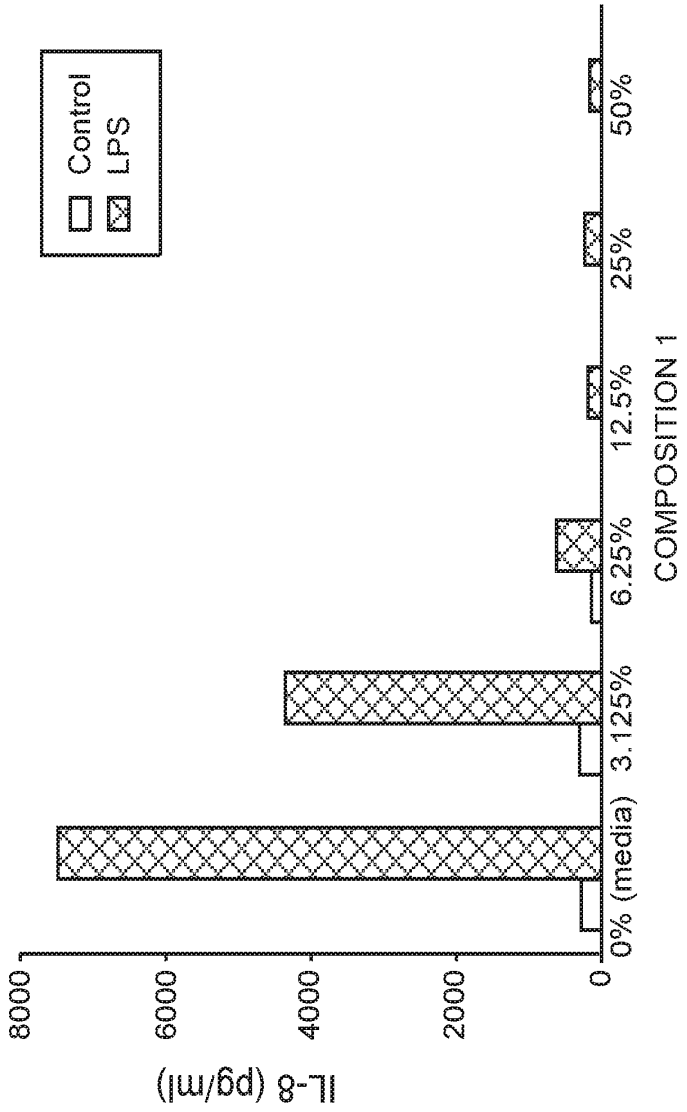
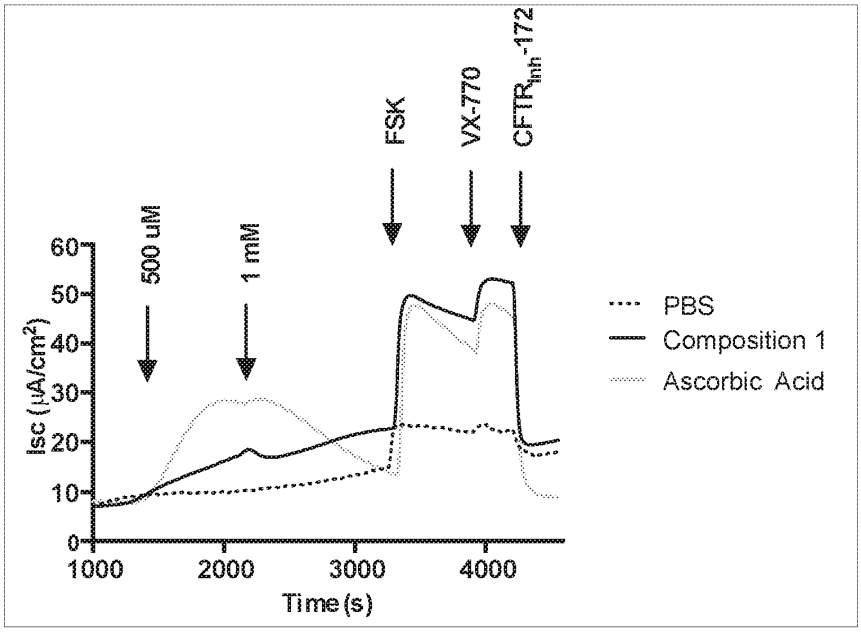
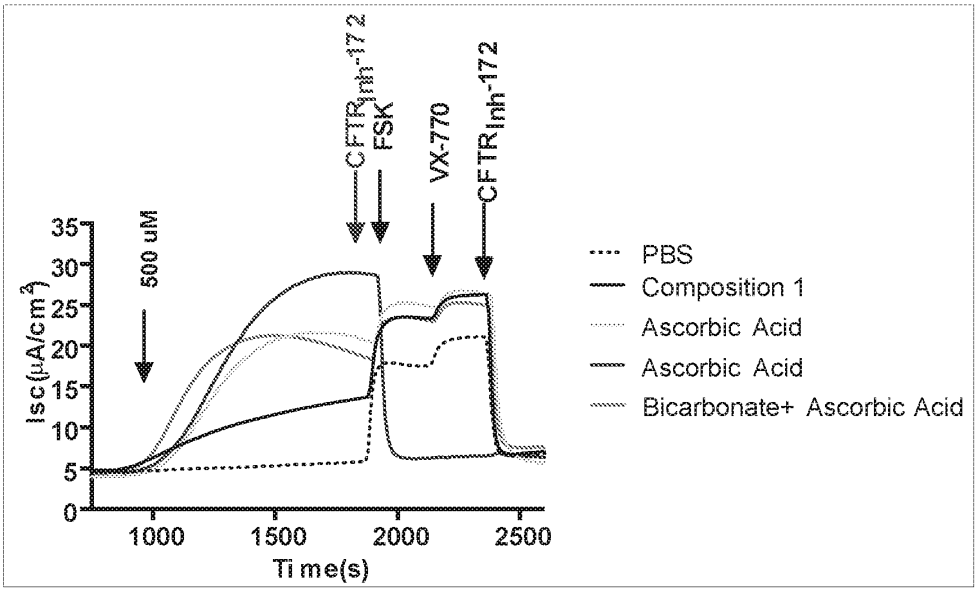

Control
LPS
IL-6 (pg/ml)
0
5
10
15
0% (media)
3.125%
6.25%
12.5%
25%
50%
COMPOSITION 1

FIG. 5B

FIG. 5C


Control
LPS
IL-8 (pg/ml)
8000
6000
4000
2000
0
0% (media)
3.125%
6.25%
12.5%
25%
50%
COMPOSITION 1





WT CFBE cells

FIG. 6

FIG. 7

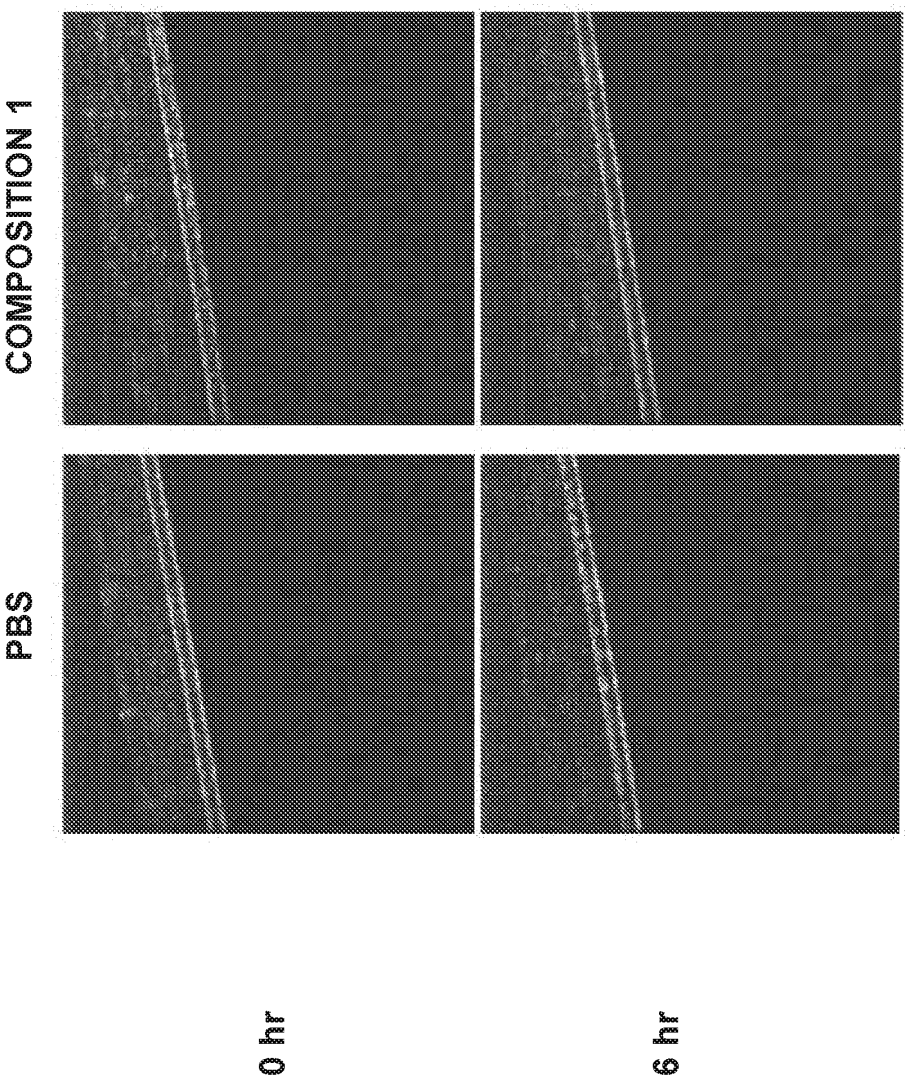
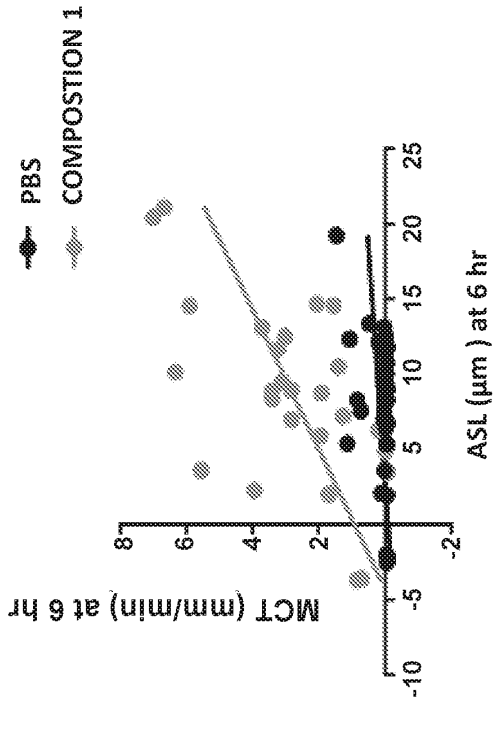
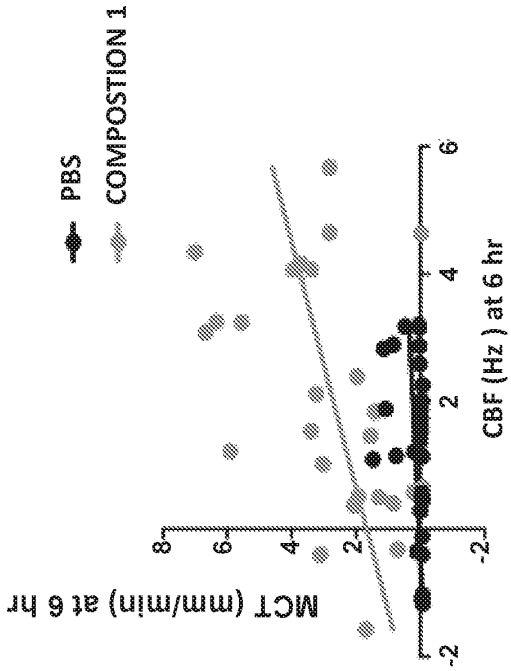


FIG. 8A



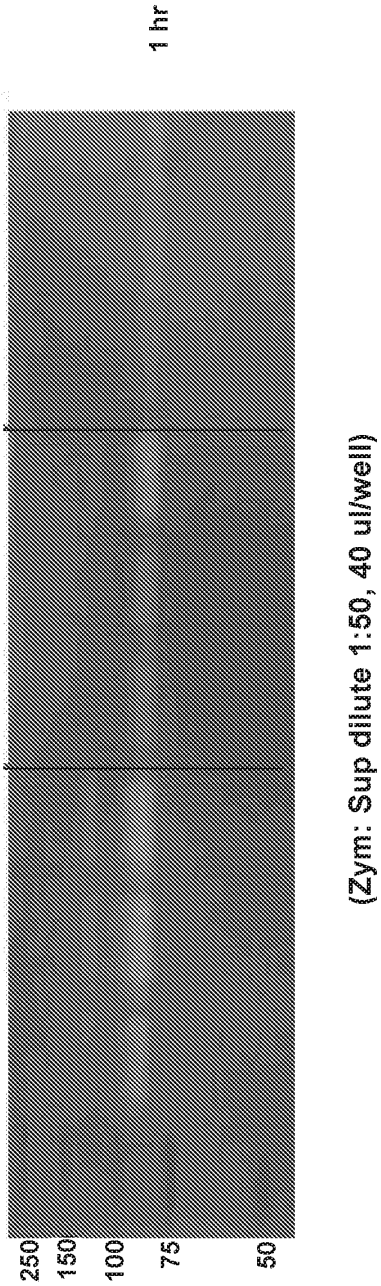
COMPOSTION 1: ; R^2=0.40, b=0.22, P<0.001

FIG. 8B



COMPOSTION 1: ; R^2=0.22, b=0.52, P=0.01

FIG. 9


1 hr
Med
LPS10
LPS100
Ar1:100
Ar1:100+ LPS10
Ar1:100+ LPS100
Ar1:10
Ar1:10+ LPS10
Ar1:10+ LPS100
250
150
100
75
50
(Zym: Sup dilute 1:50, 40 ul/well)

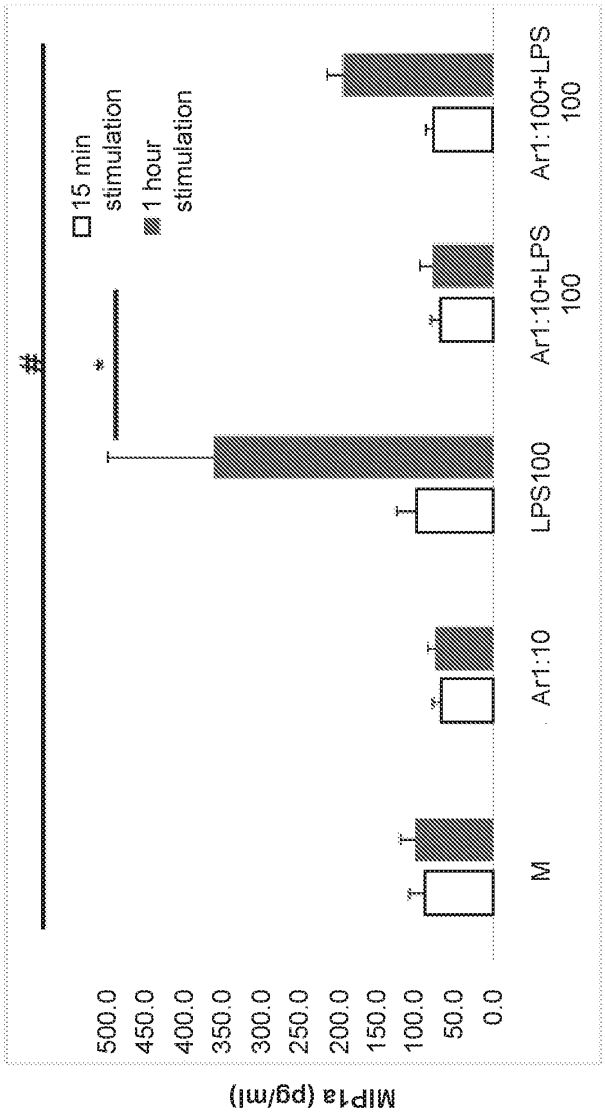


FIG. 10A

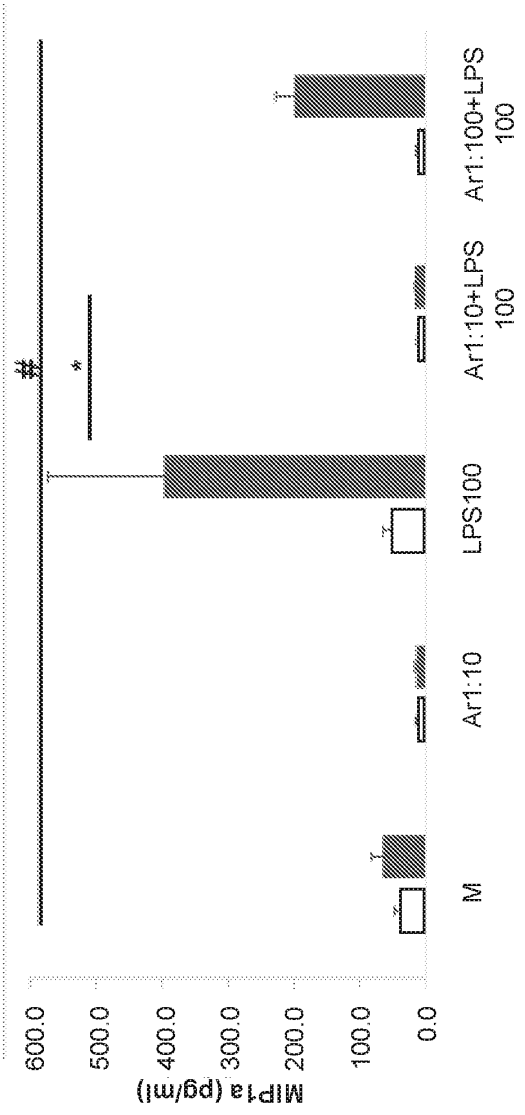


FIG. 10B

FIG. 11

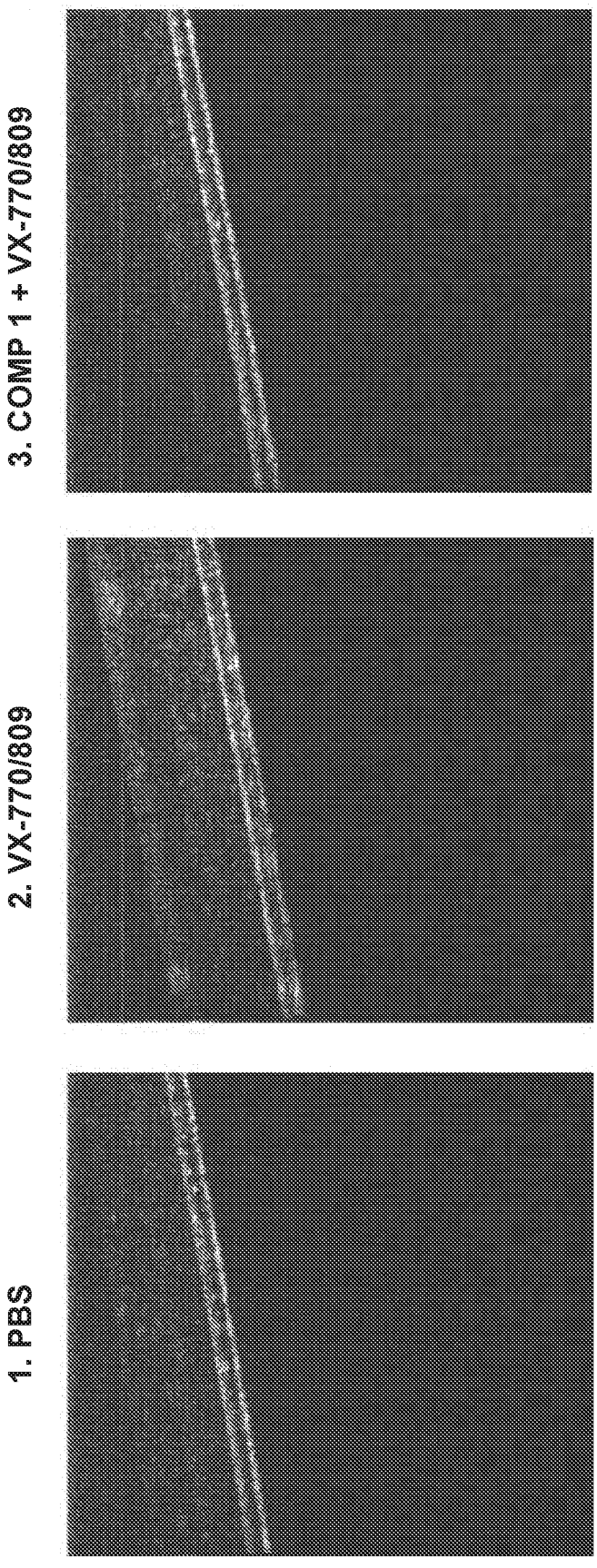
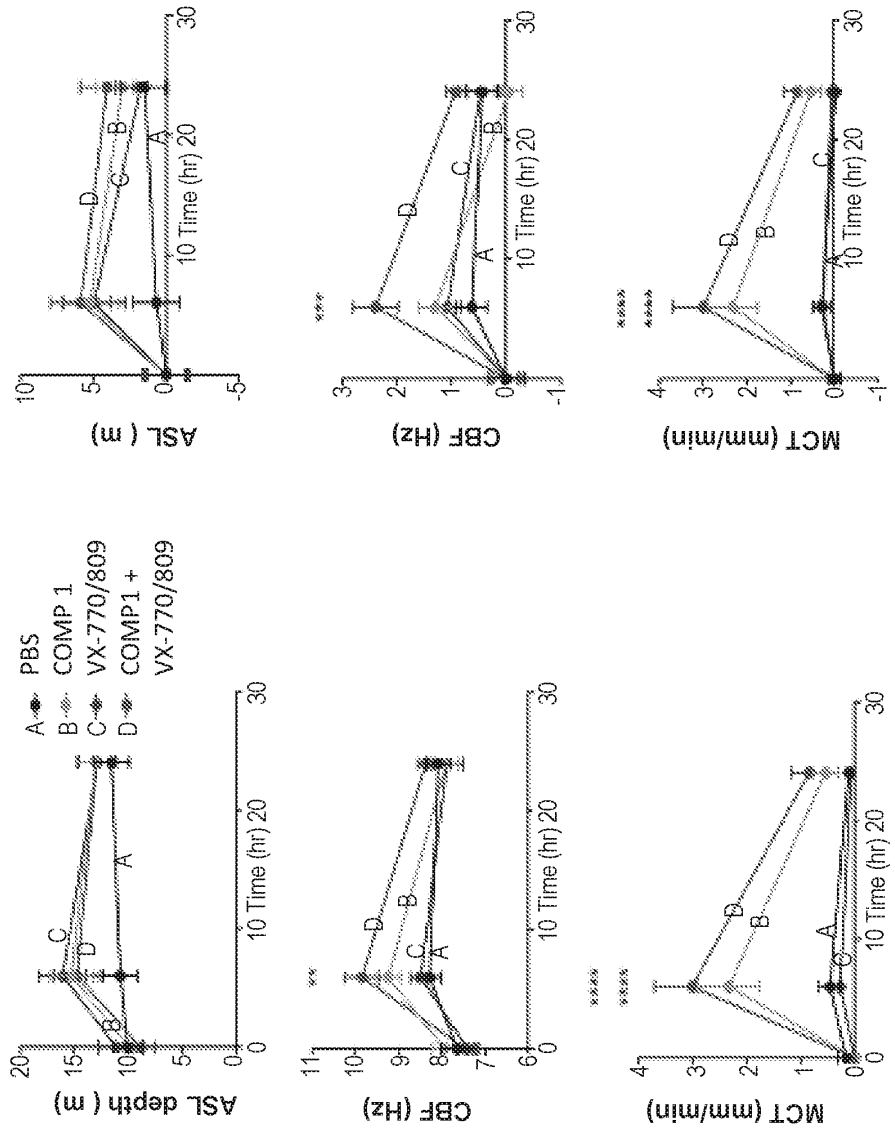
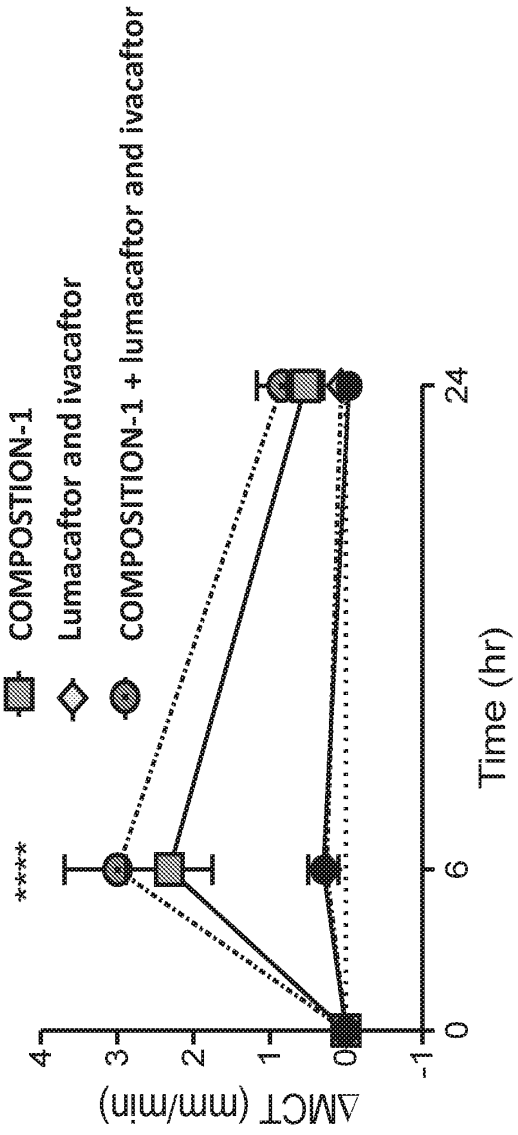


FIG. 12A



**P<0.01, P<0.001, ****P<0.0001

FIG. 12B



Change from baseline vs. PBS. Data represents monolayers from 3 donors. n=20 monolayers per condition. ***P < 0.0001

FIG. 13

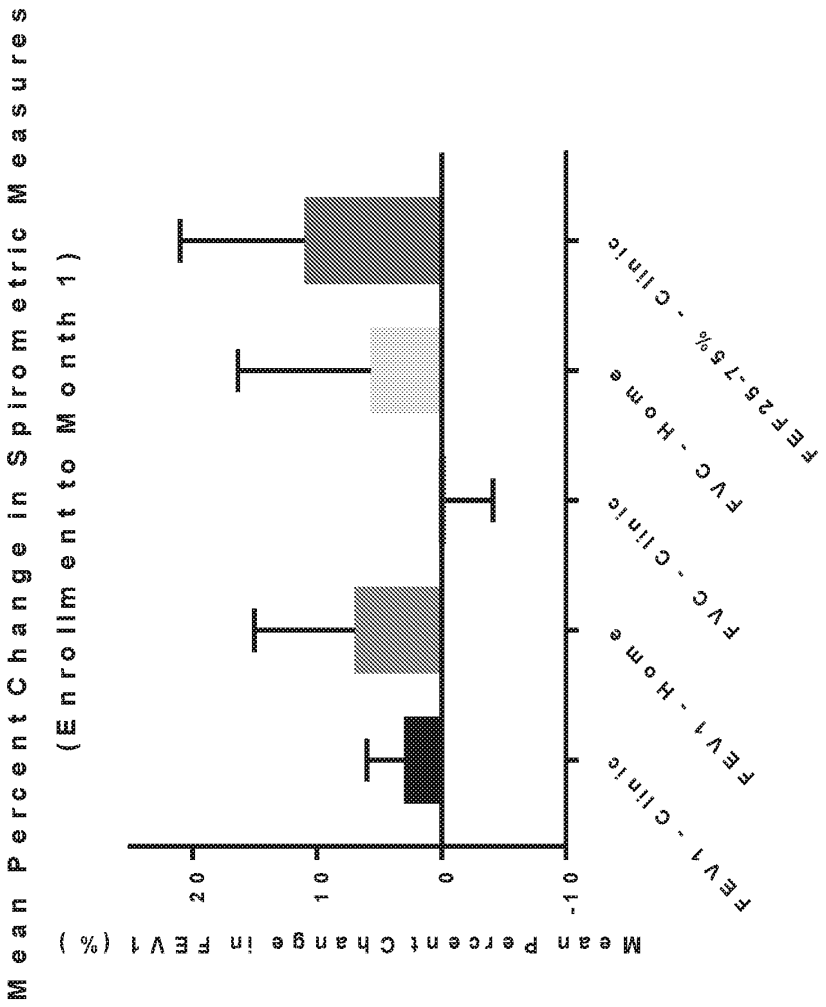

Mean Percent Change in Spirometric Measures
(Enrollment to Month 1)
Mean Percent Change in FEV1 (%)
20
10
0
-10
FEV1 - Clinic
FEV1 - Home
FVC - Clinic
FVC - Home
FEF25-75% - Clinic

FIG. 14

Patient	Enrollment (ppb)	Post-Composition 1 (ppb)	% Change in FENO
Patient 02 CF	18	10	-44%
Patient 03 ILD	18	14	-22%
Patient 04 CF	12	6	-50%
Patient 05 A1AT	13	5	-62%

FIG. 15

Formulation based on ratio	Formulation Description (GSH is mid concentration in all Formulations)	Solubility	Precipitate Formation after Storage (72 h, 2-8°C)	Approximate pH after Storage (72 h, 2-8°C)	Impurities after Storage (72 h, 2-8°C)
1	Low ASC, Low Buffer	Poor	Precipitate	<5 (Acidic)	2.7%
2	Low ASC, Mid Buffer	Good	None	<5 (Acidic)	1.5%
3	Low ASC, High Buffer	Good	None	>7 (Basic)	7.9%
4	Mid ASC, Low Buffer	Poor	Precipitate	<5 (Acidic)	2.6%
5	Mid ASC, Mid Buffer	Good	None	<5 (Acidic)	1.9%
6	Mid ASC, High Buffer	Good	None	>7 (Basic)	7.8%
7	High ASC, Low Buffer	Poor	Precipitate	<5 (Acidic)	2.9%
8	High ASC, Mid Buffer	Poor	None	<5 (Acidic)	2.5%
9 (Composition 1)	High ASC, High Buffer	Good	None	6-7 (Optimal)	3.8%