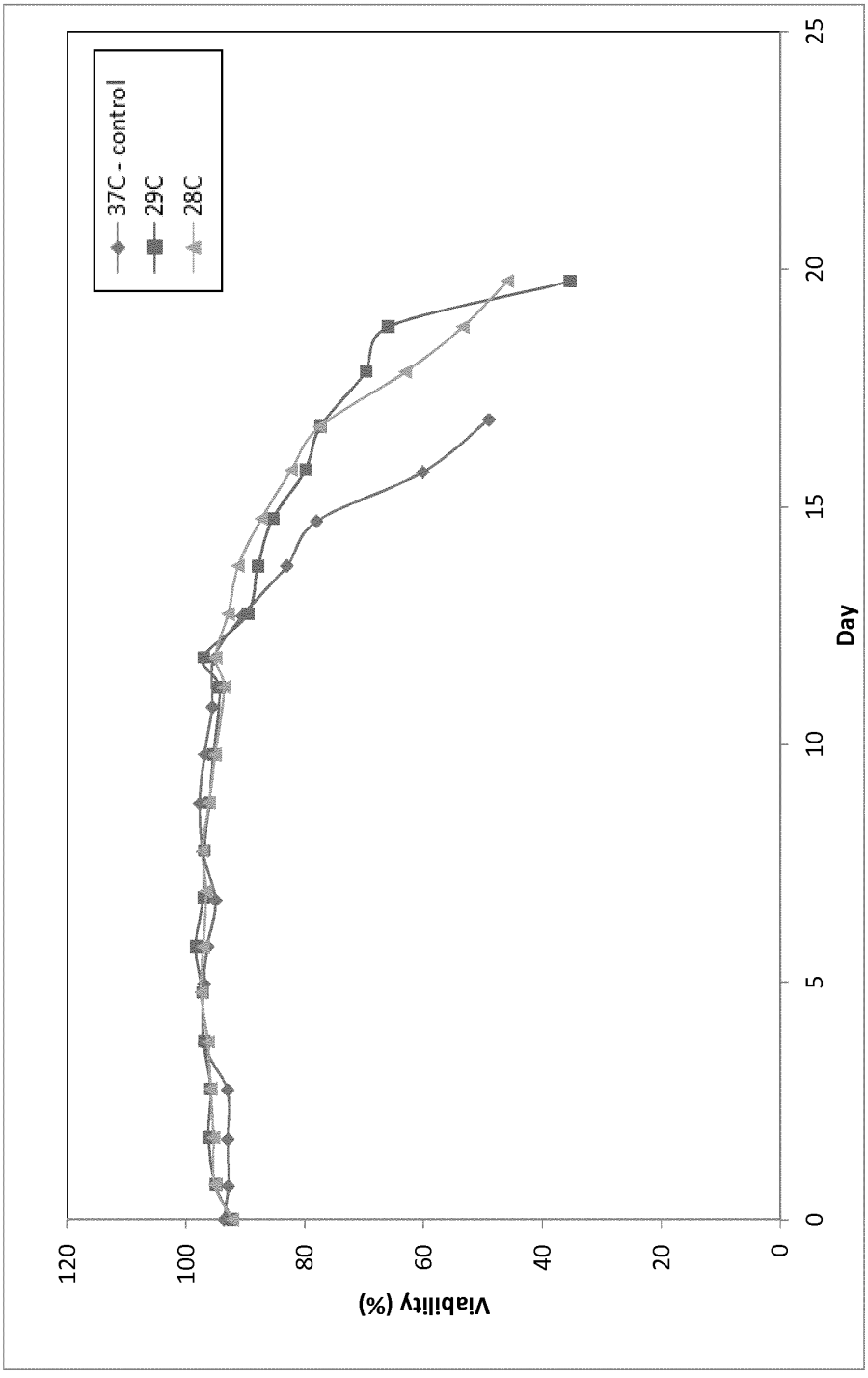

37C - control
29C
28C
Viability (%)
120
100
80
60
40
20
0
0
5
10
15
20
25
Day

FIG. 1 (A)

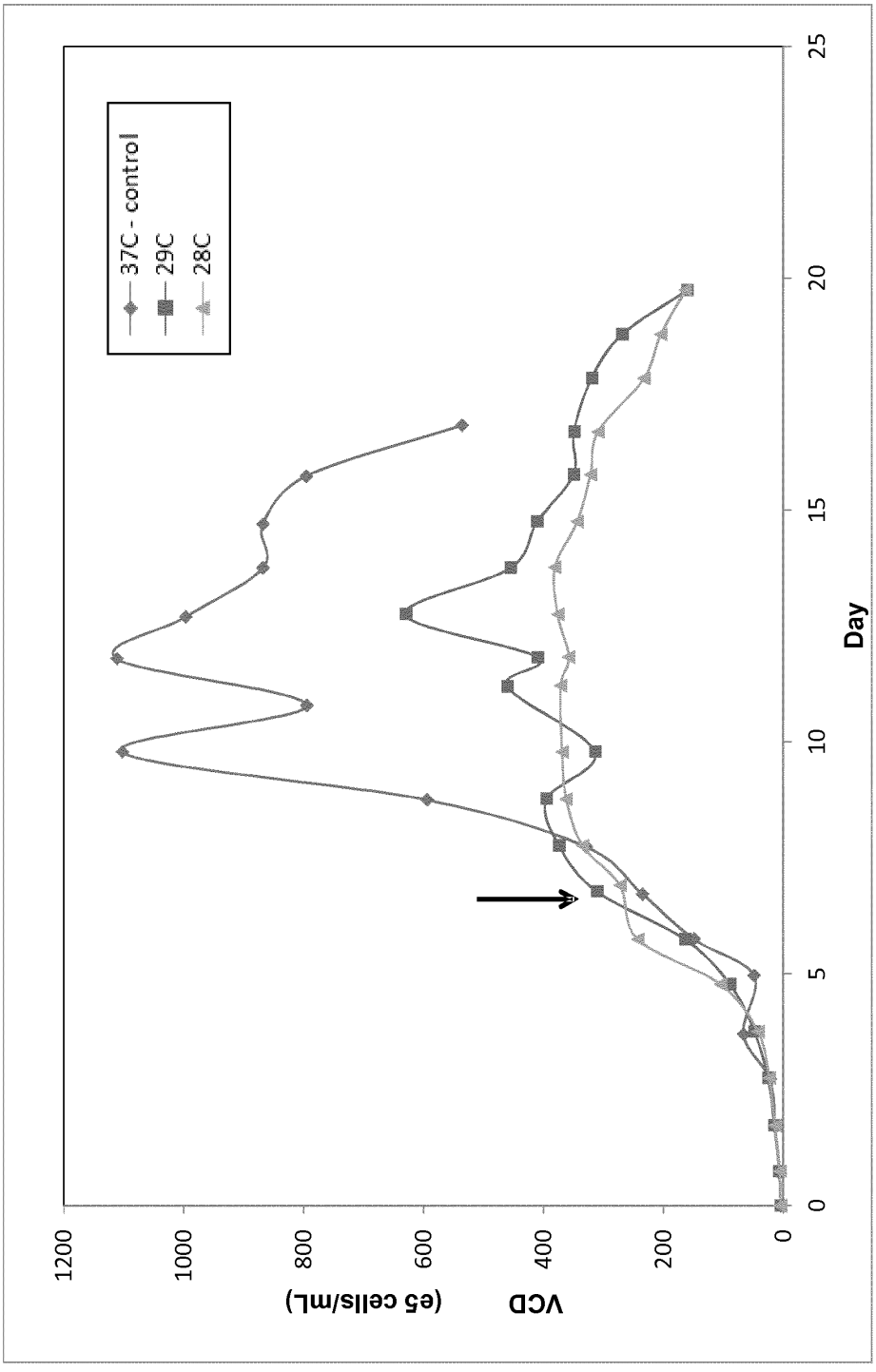

37C - control
29C
28C
VCD (e5 cells/mL)
Day
0
200
400
600
800
1000
1200
0
5
10
15
20
25

FIG. 1 (B)

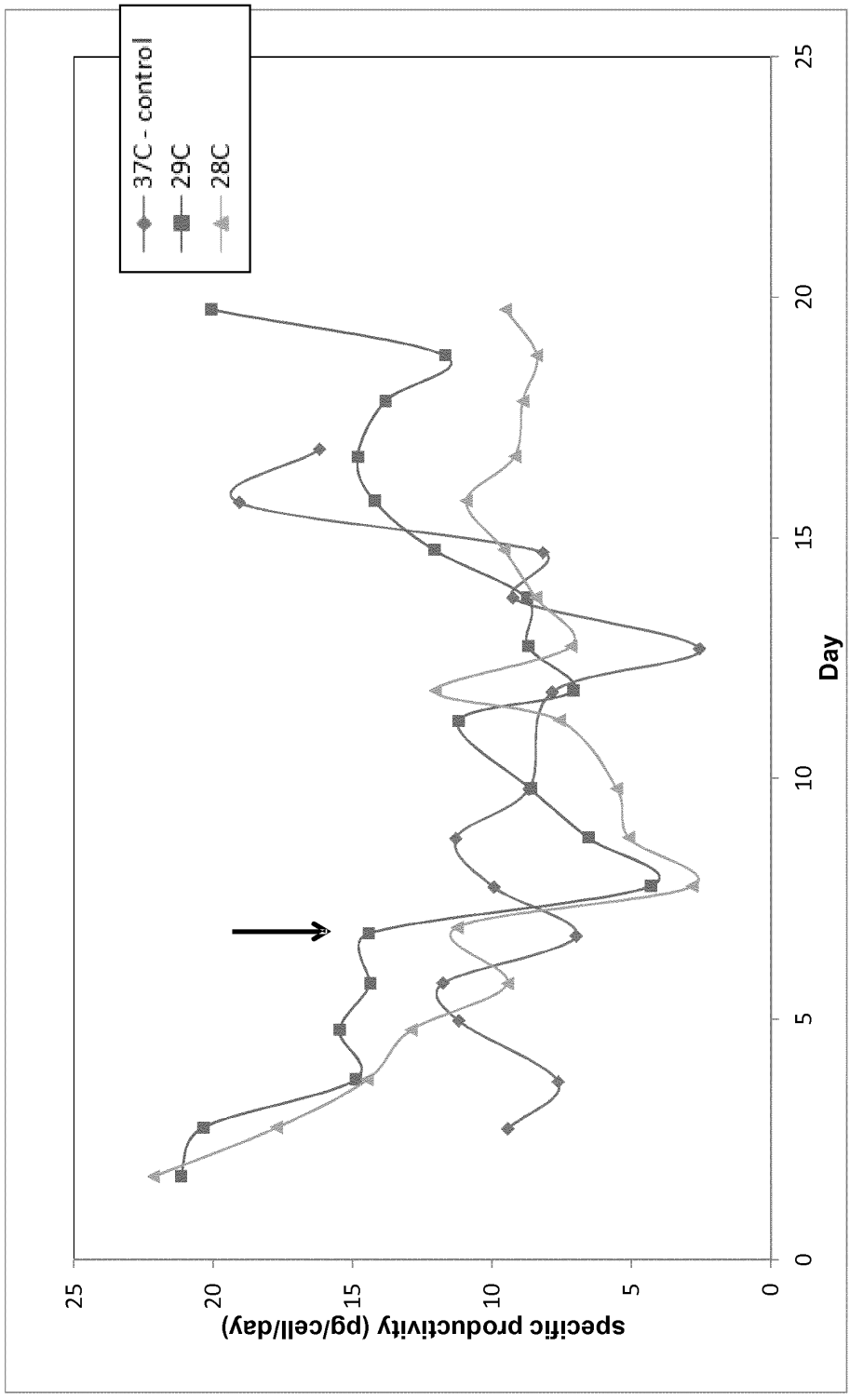

37C - control
29C
28C
specific productivity (pg/cell/day)
Day
0
5
10
15
20
25

FIG. 1 (C)

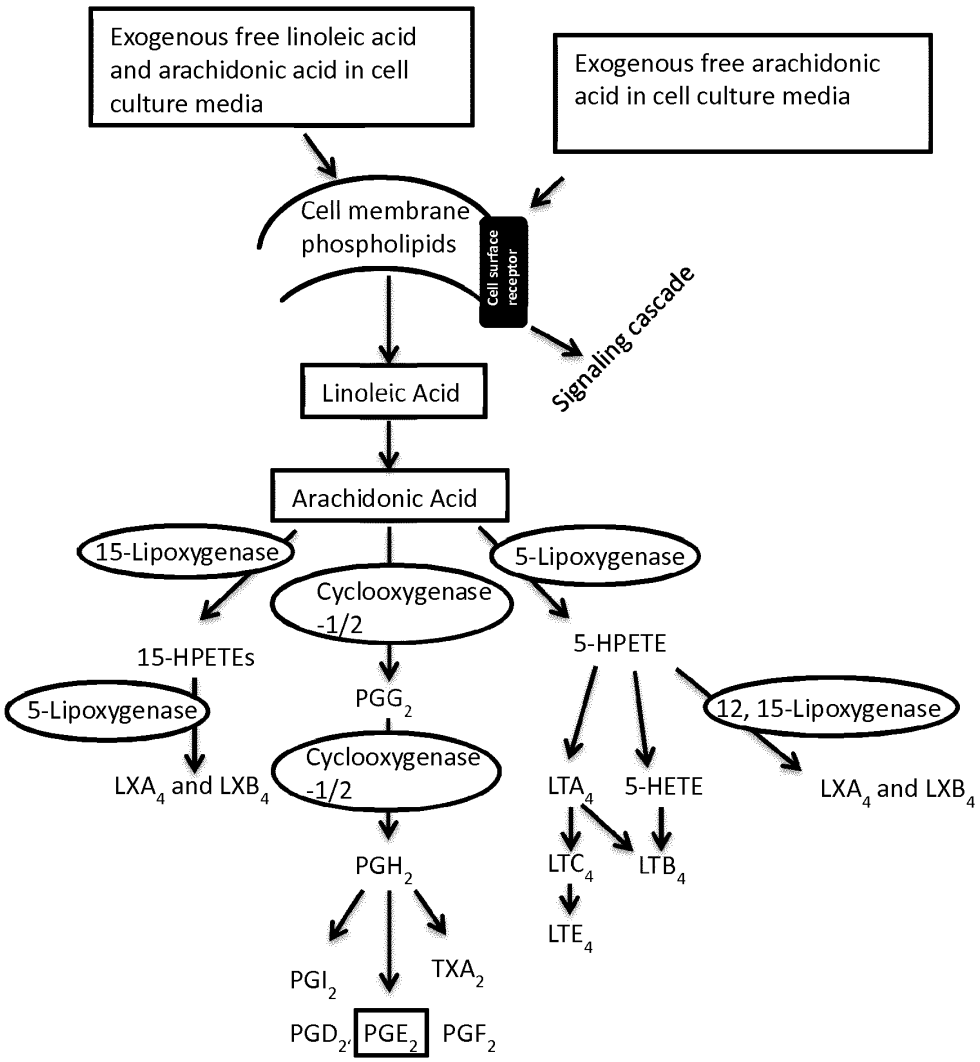

Exogenous free linoleic acid and arachidonic acid in cell culture media
Exogenous free arachidonic acid in cell culture media
Cell membrane phospholipids
Cell surface receptor
Signaling cascade
Linoleic Acid
Arachidonic Acid
15-Lipoxygenase
Cyclooxygenase -1/2
5-Lipoxygenase
15-HPETEs
5-Lipoxygenase
LXA4 and LXB4
PGG2
Cyclooxygenase -1/2
PGH2
PGI2
TXA2
PGD2, PGE2 PGF2
5-HPETE
12, 15-Lipoxygenase
LXA4 and LXB4
LTA4
5-HETE
LTC4
LTB4
LTE4

FIG. 2

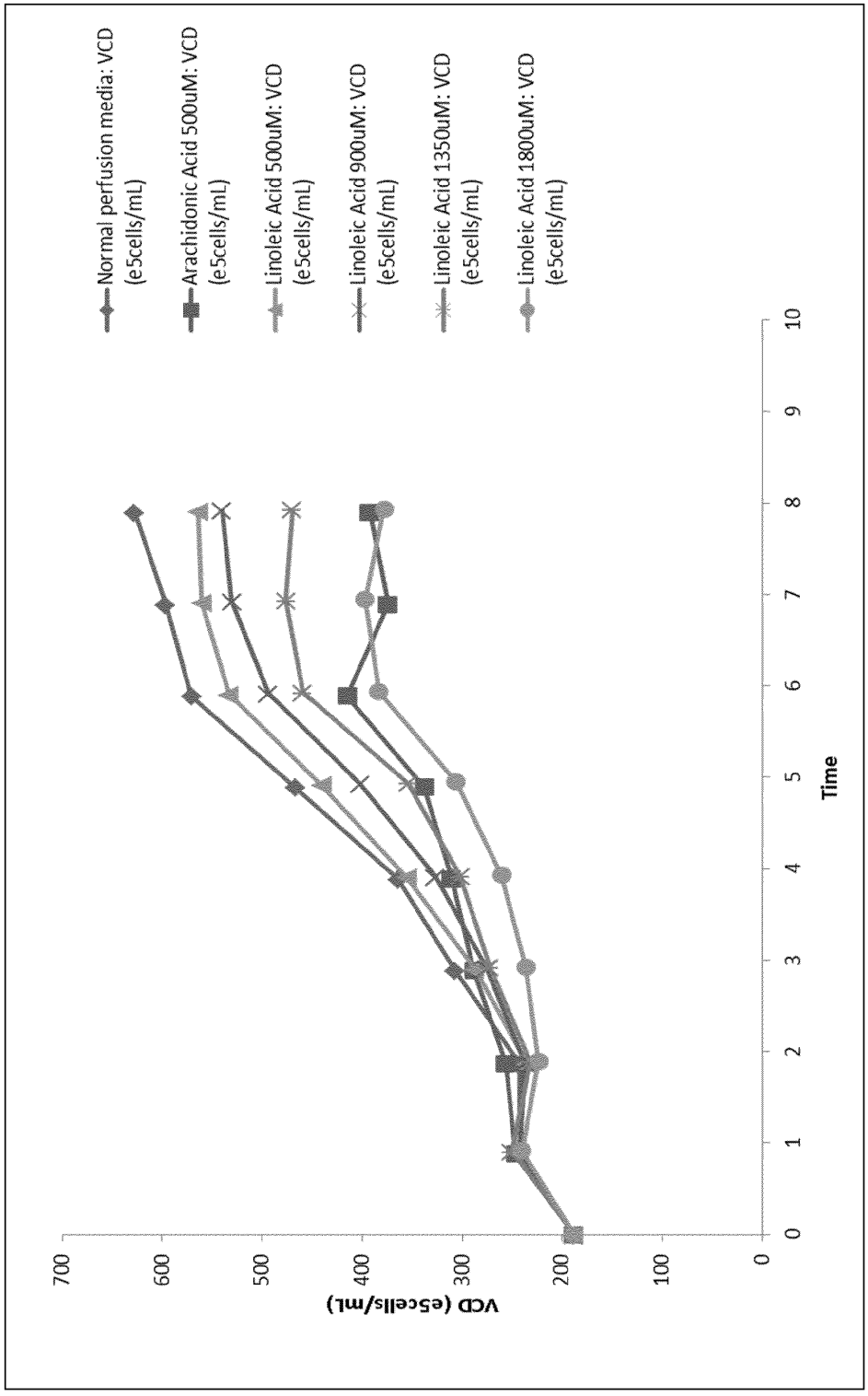

Normal perfusion media: VCD (e5cells/mL)
Arachidonic Acid 500uM: VCD (e5cells/mL)
Linoleic Acid 500uM: VCD (e5cells/mL)
Linoleic Acid 900uM: VCD (e5cells/mL)
Linoleic Acid 1350uM: VCD (e5cells/mL)
Linoleic Acid 1800uM: VCD (e5cells/mL)
VCD (e5cells/mL)
Time
0
100
200
300
400
500
600
700
0
1
2
3
4
5
6
7
8
9
10

FIG. 3 (A)

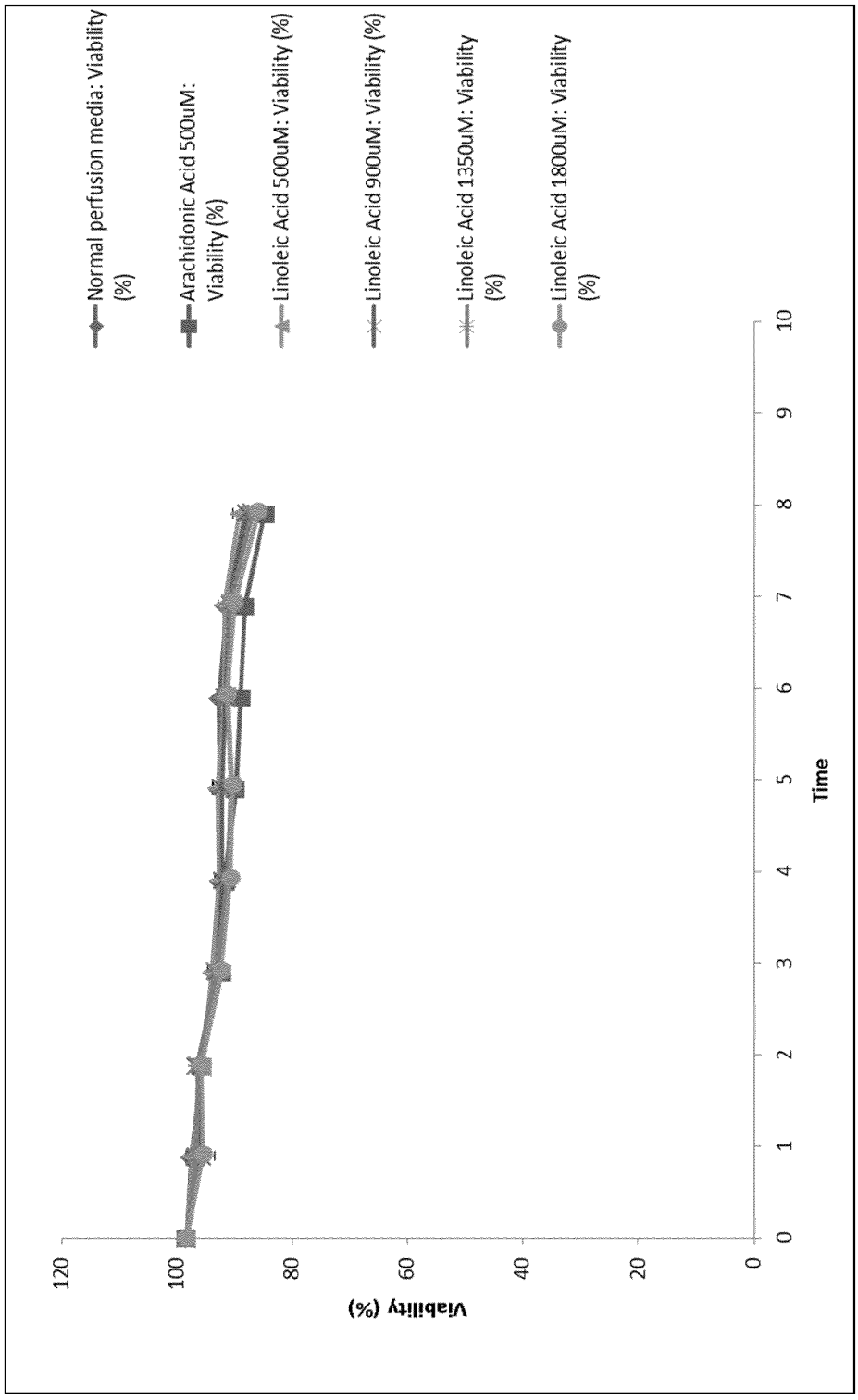

Normal perfusion media: Viability (%)
Arachidonic Acid 500uM: Viability (%)
Linoleic Acid 500uM: Viability (%)
Linoleic Acid 900uM: Viability (%)
Linoleic Acid 1350uM: Viability (%)
Linoleic Acid 1800uM: Viability (%)
Viability (%)
120
100
80
60
40
20
0
0
1
2
3
4
5
6
7
8
9
10
Time

FIG. 3 (B)

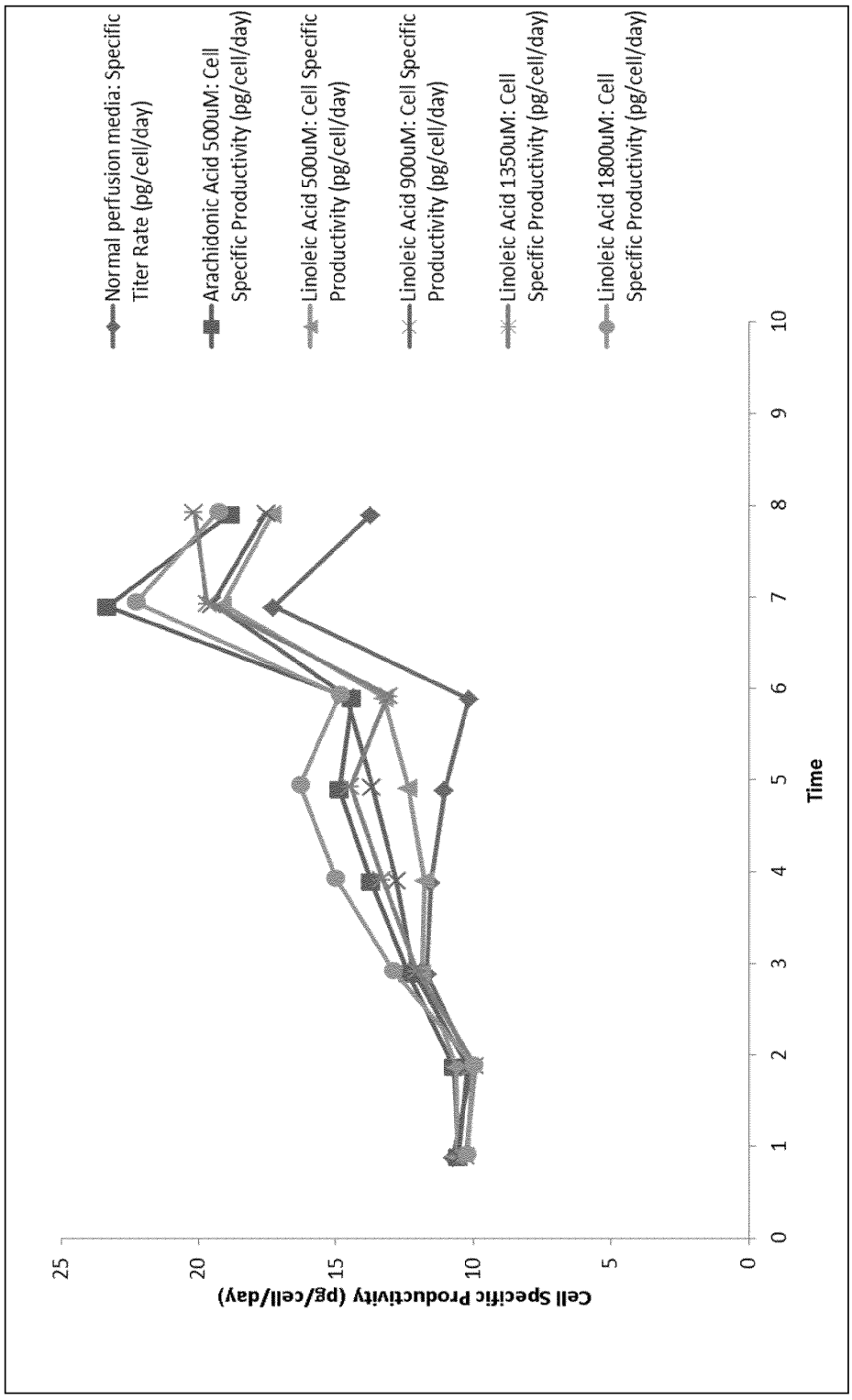

Normal perfusion media: Specific Titer Rate (pg/cell/day)
Arachidonic Acid 500uM: Cell Specific Productivity (pg/cell/day)
Linoleic Acid 500uM: Cell Specific Productivity (pg/cell/day)
Linoleic Acid 900uM: Cell Specific Productivity (pg/cell/day)
Linoleic Acid 1350uM: Cell Specific Productivity (pg/cell/day)
Linoleic Acid 1800uM: Cell Specific Productivity (pg/cell/day)
Cell Specific Productivity (pg/cell/day)
25
20
15
10
5
0
0
1
2
3
4
5
6
7
8
9
10
Time

FIG. 3 (C)

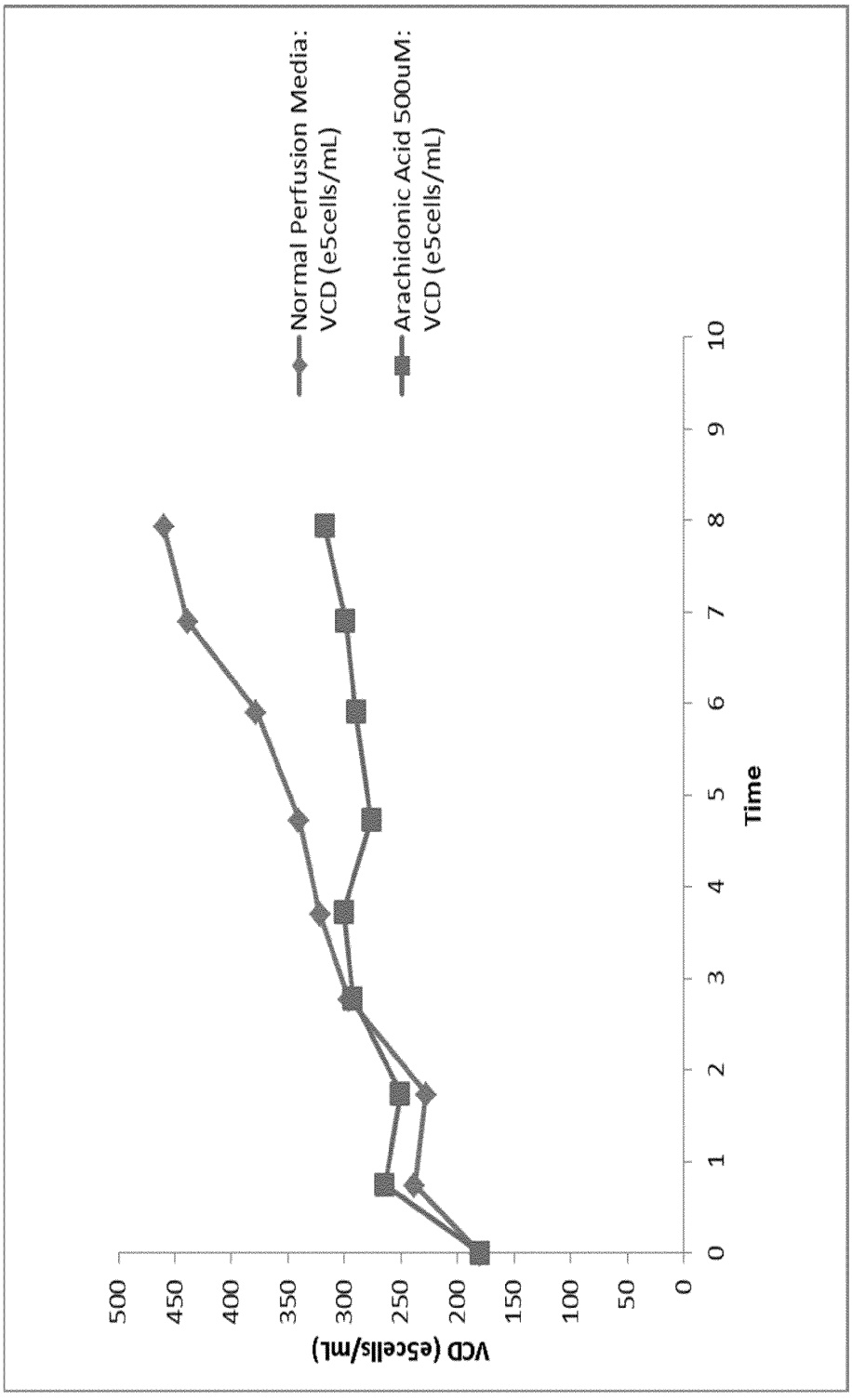

Normal Perfusion Media: VCD (e5cells/mL)
Arachidonic Acid 500uM: VCD (e5cells/mL)
VCD (e5cells/mL)
Time
500
450
400
350
300
250
200
150
100
50
0
0
1
2
3
4
5
6
7
8
9
10

FIG. 4 (A)

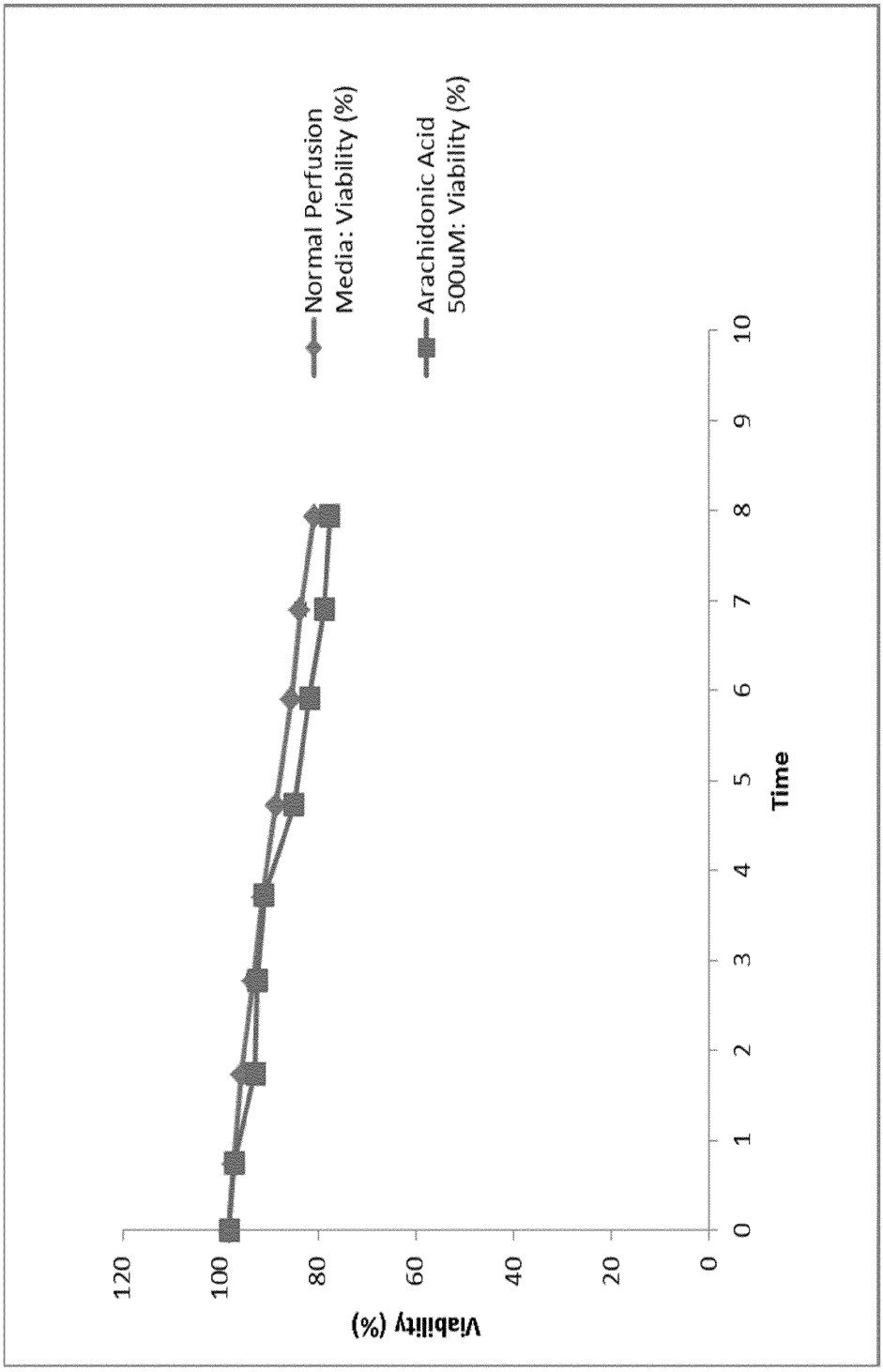

Normal Perfusion Media: Viability (%)
Arachidonic Acid 500uM: Viability (%)
Viability (%)
120
100
80
60
40
20
0
0
1
2
3
4
5
6
7
8
9
10
Time

FIG. 4 (B)

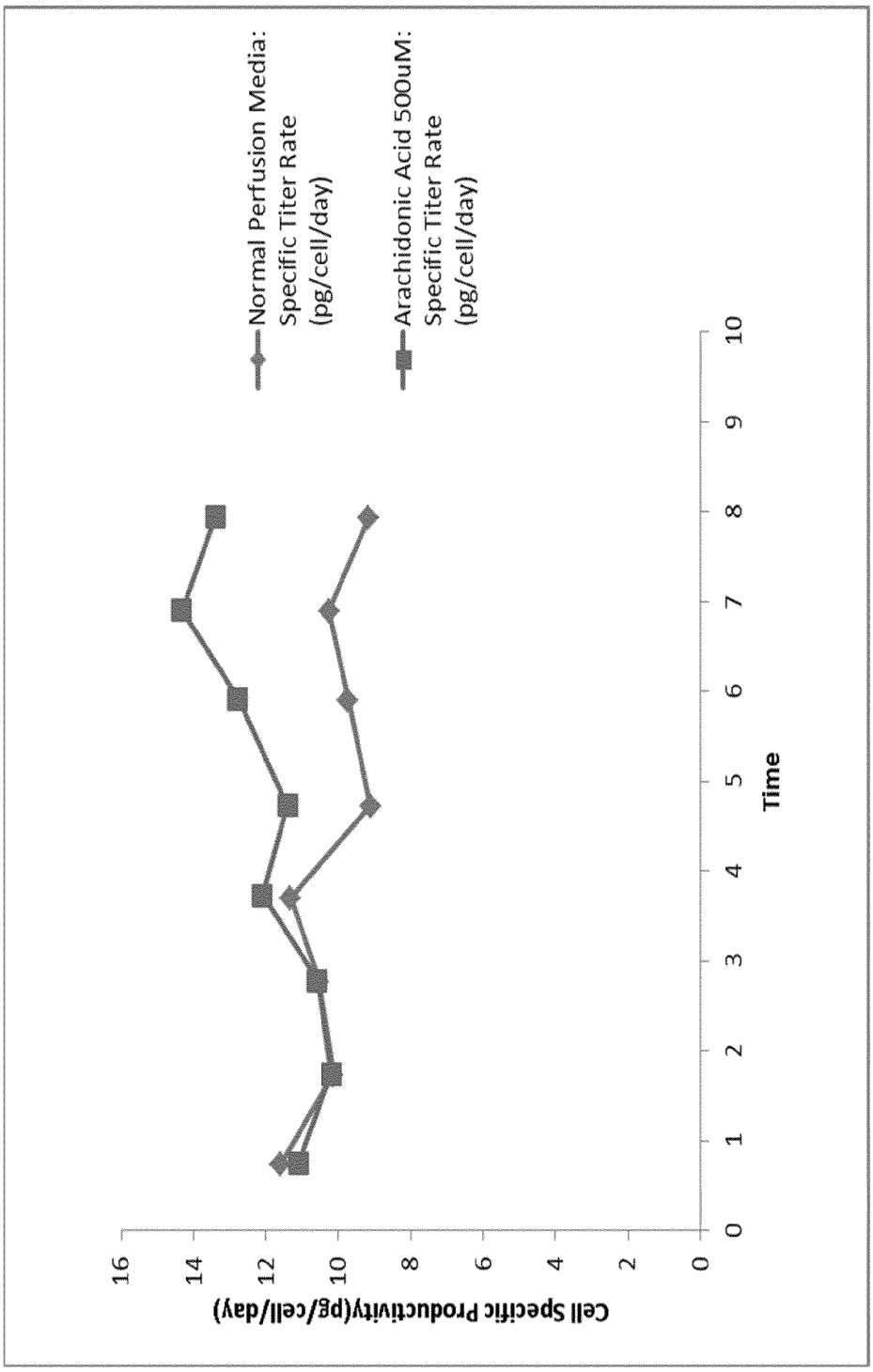

Normal Perfusion Media: Specific Titer Rate (pg/cell/day)
Arachidonic Acid 500uM: Specific Titer Rate (pg/cell/day)
Cell Specific Productivity(pg/cell/day)
Time
0
2
4
6
8
10
12
14
16
0
1
2
3
4
5
6
7
8
9
10

FIG. 4 (C)

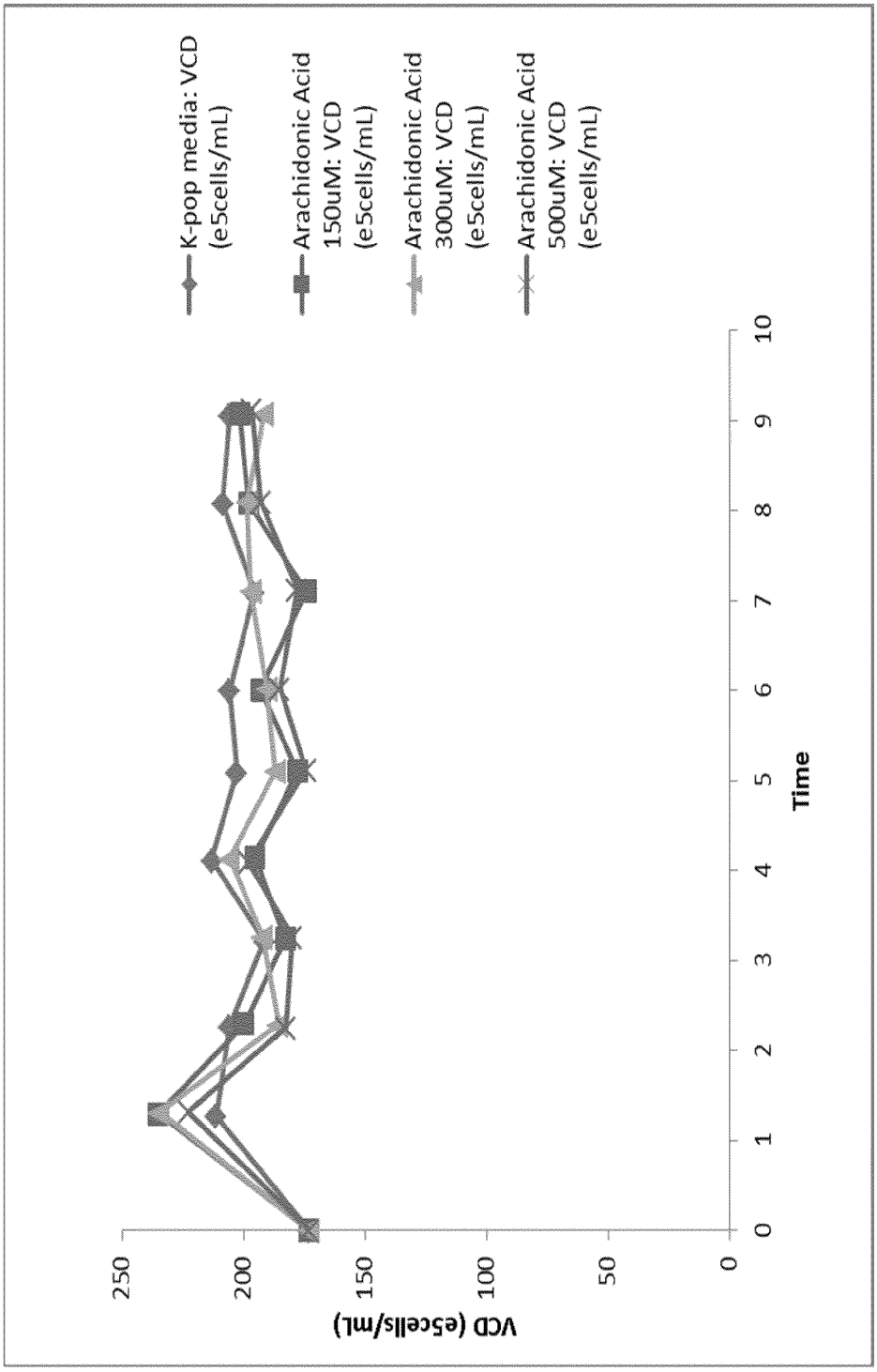

K-pop media: VCD (e5cells/mL)
Arachidonic Acid 150uM: VCD (e5cells/mL)
Arachidonic Acid 300uM: VCD (e5cells/mL)
Arachidonic Acid 500uM: VCD (e5cells/mL)
VCD (e5cells/mL)
250
200
150
100
50
0
0
1
2
3
4
5
6
7
8
9
10
Time

FIG. 5 (A)

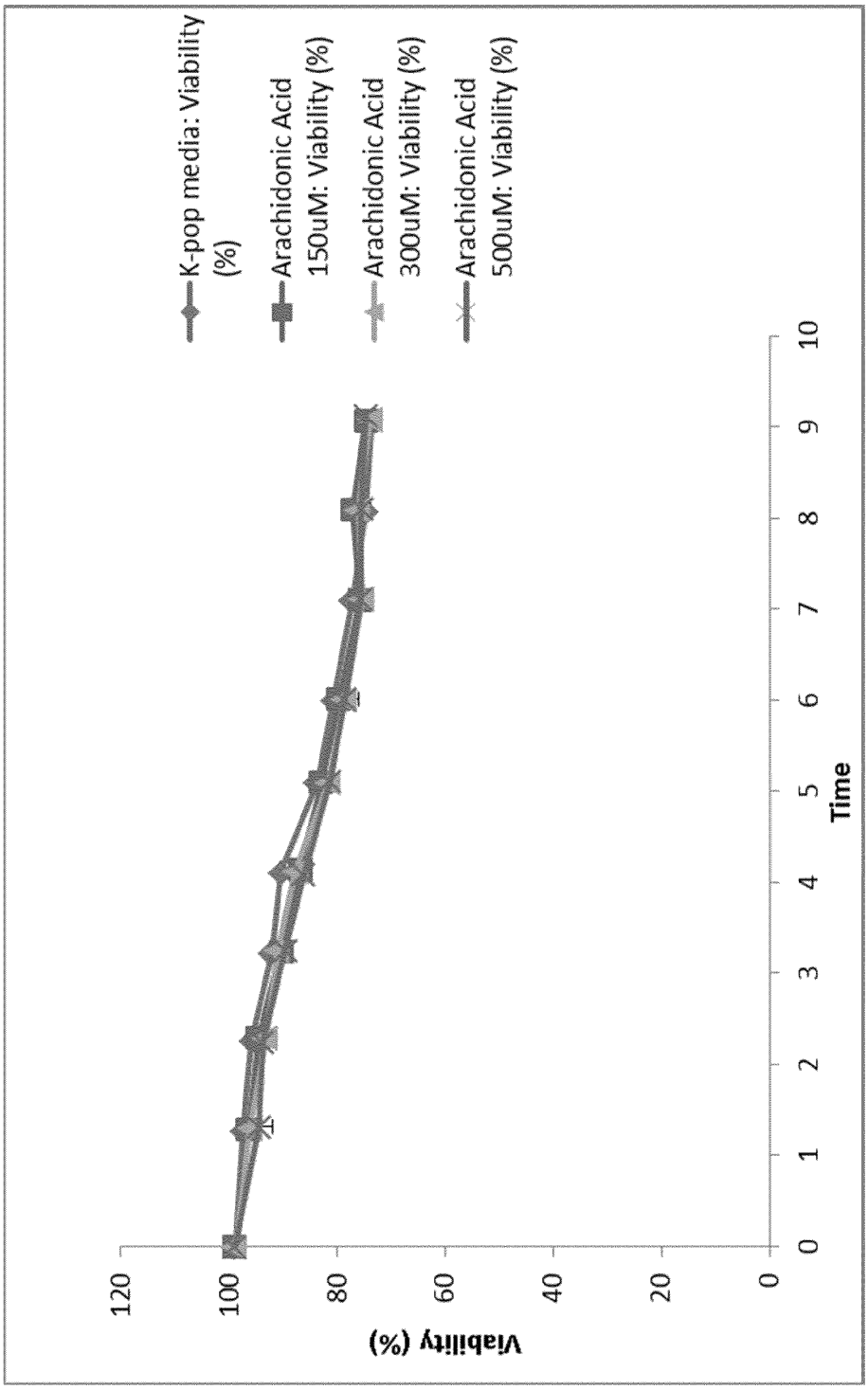

K-pop media: Viability (%)
Arachidonic Acid 150uM: Viability (%)
Arachidonic Acid 300uM: Viability (%)
Arachidonic Acid 500uM: Viability (%)
Viability (%)
120
100
80
60
40
20
0
0
1
2
3
4
5
6
7
8
9
10
Time

FIG. 5 (B)

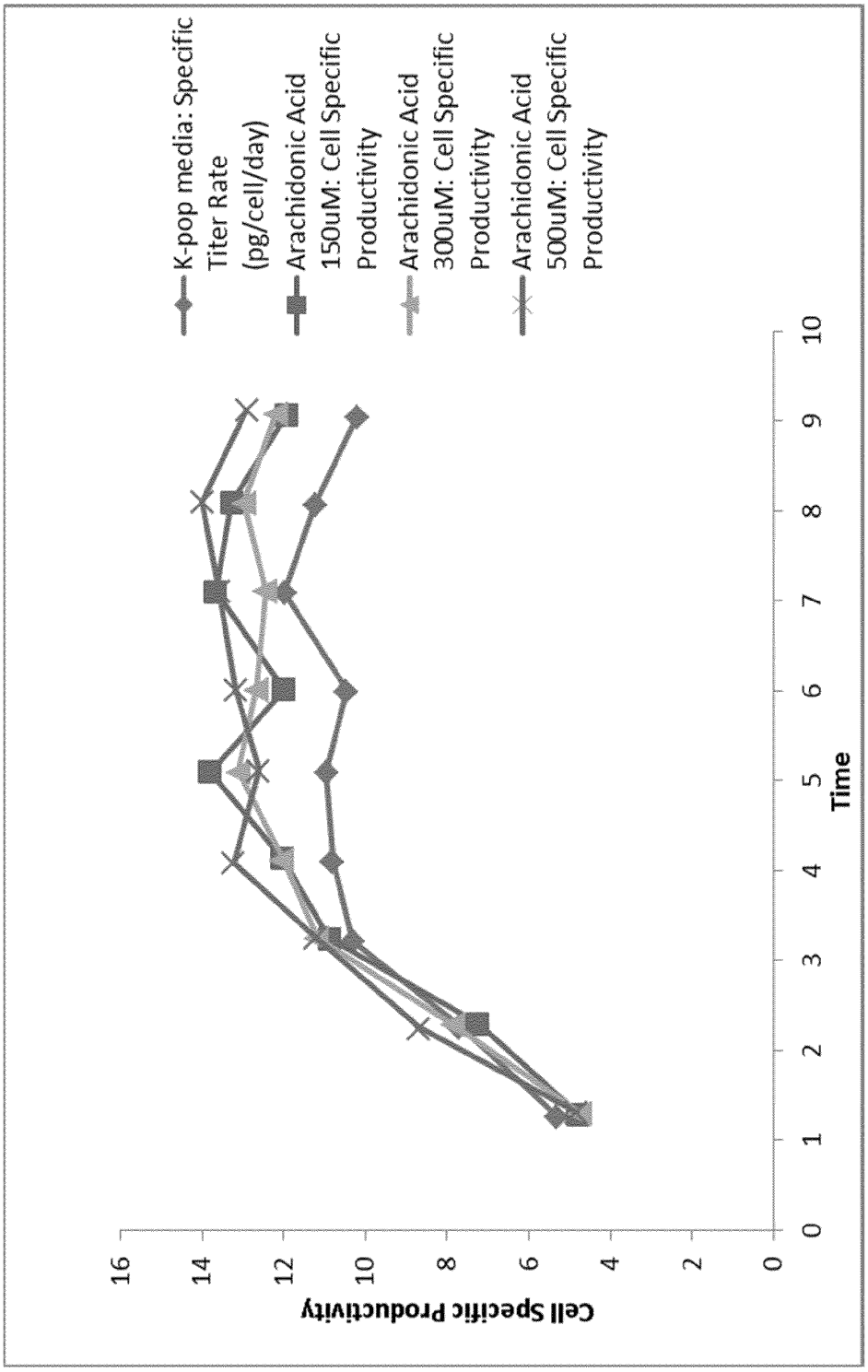

K-pop media: Specific Titer Rate (pg/cell/day)
Arachidonic Acid 150uM: Cell Specific Productivity
Arachidonic Acid 300uM: Cell Specific Productivity
Arachidonic Acid 500uM: Cell Specific Productivity
Cell Specific Productivity
Time
0
2
4
6
8
10
12
14
16
0
1
2
3
4
5
6
7
8
9
10

FIG. 5 (C)

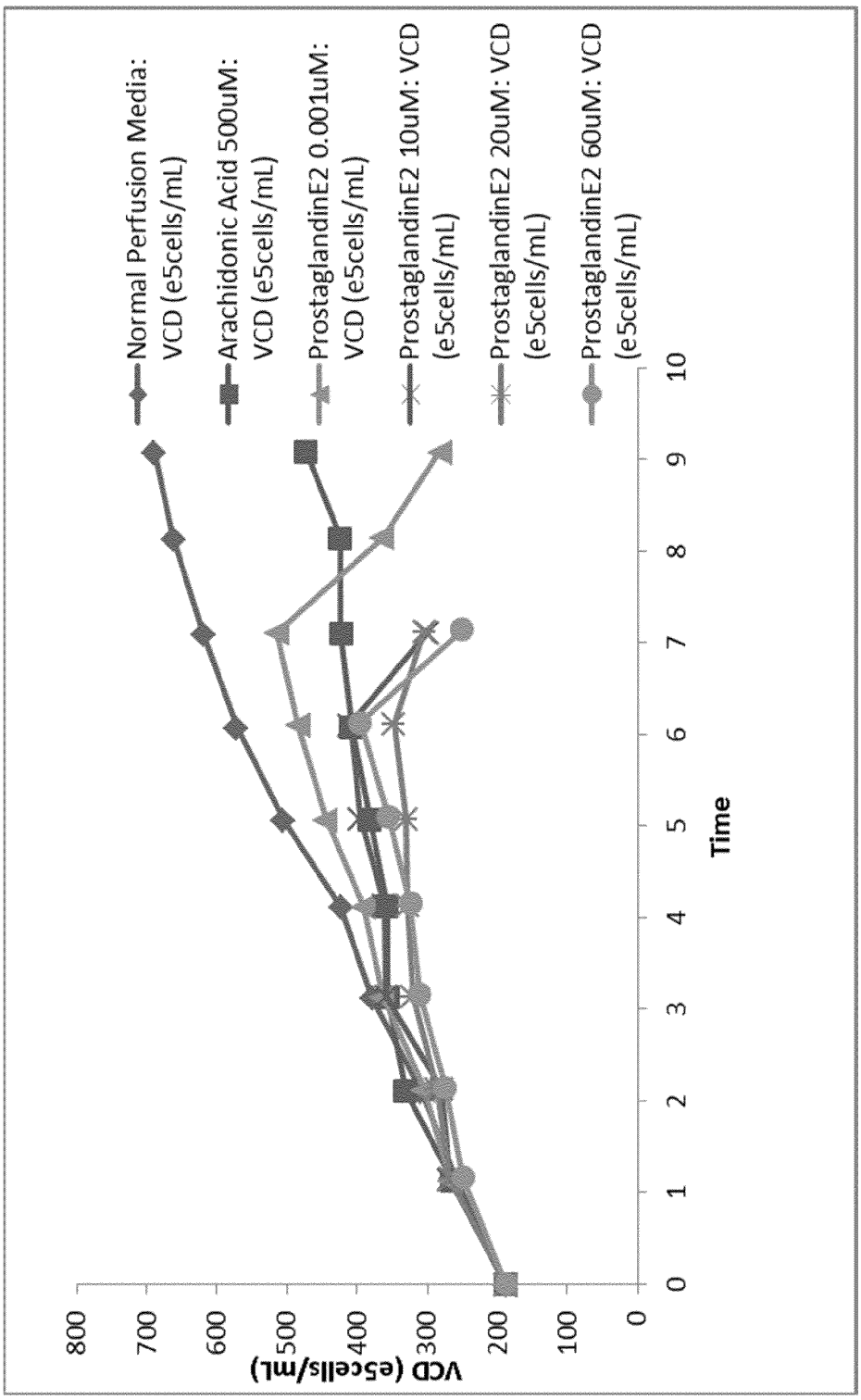

Normal Perfusion Media: VCD (e5cells/mL)
Arachidonic Acid 500uM: VCD (e5cells/mL)
ProstaglandinE2 0.001uM: VCD (e5cells/mL)
ProstaglandinE2 10uM: VCD (e5cells/mL)
ProstaglandinE2 20uM: VCD (e5cells/mL)
ProstaglandinE2 60uM: VCD (e5cells/mL)
VCD (e5cells/mL)
800
700
600
500
400
300
200
100
0
0 1 2 3 4 5 6 7 8 9 10
Time

FIG. 6 (A)

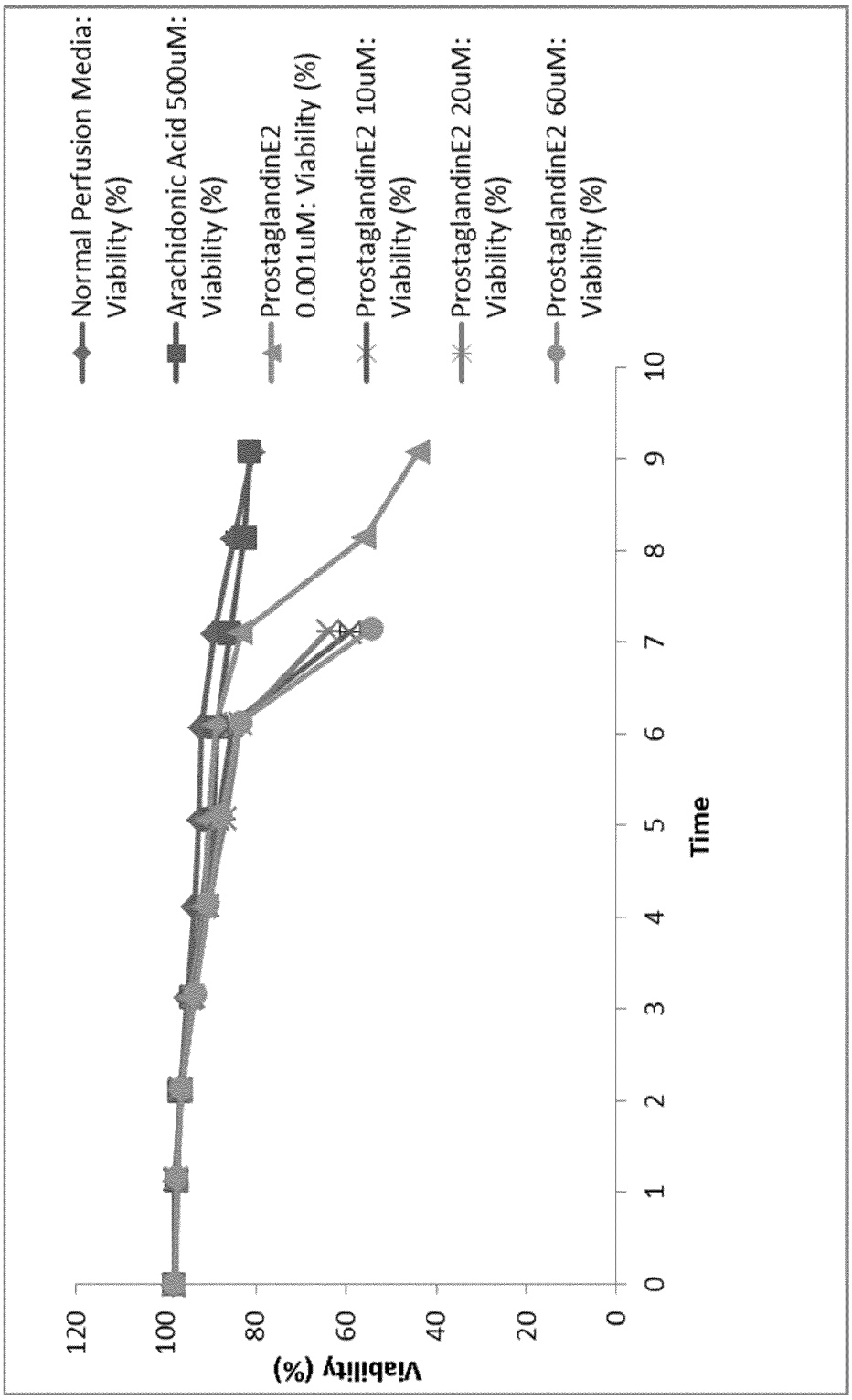

Normal Perfusion Media: Viability (%)
Arachidonic Acid 500uM: Viability (%)
ProstaglandinE2 0.001uM: Viability (%)
ProstaglandinE2 10uM: Viability (%)
ProstaglandinE2 20uM: Viability (%)
ProstaglandinE2 60uM: Viability (%)
Viability (%)
120
100
80
60
40
20
0
0 1 2 3 4 5 6 7 8 9 10
Time

FIG. 6 (B)

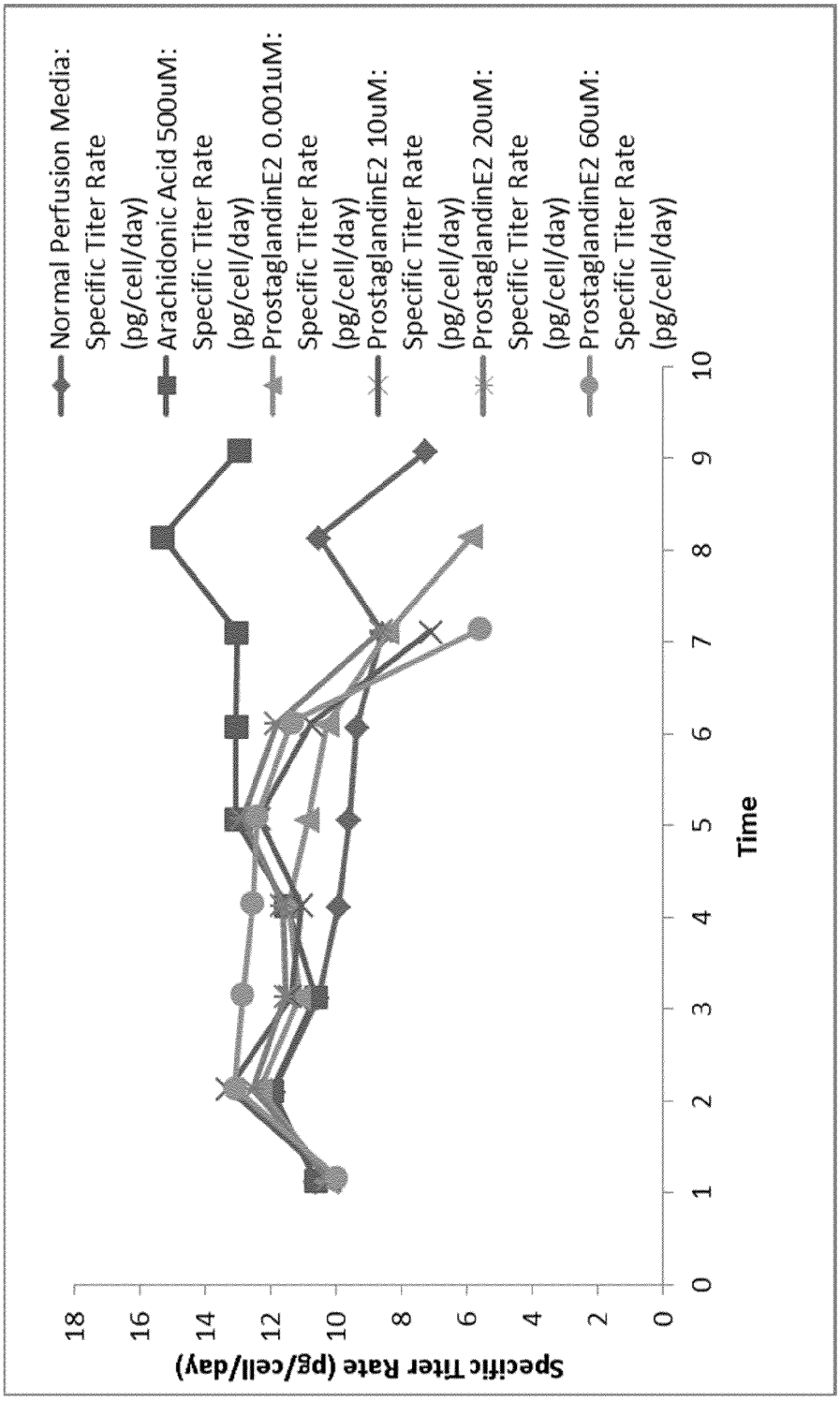

Normal Perfusion Media: Specific Titer Rate (pg/cell/day)
Arachidonic Acid 500uM: Specific Titer Rate (pg/cell/day)
ProstaglandinE2 0.001uM: Specific Titer Rate (pg/cell/day)
ProstaglandinE2 10uM: Specific Titer Rate (pg/cell/day)
ProstaglandinE2 20uM: Specific Titer Rate (pg/cell/day)
ProstaglandinE2 60uM: Specific Titer Rate (pg/cell/day)
Specific Titer Rate (pg/cell/day)
Time
0
2
4
6
8
10
12
14
16
18
0
1
2
3
4
5
6
7
8
9
10

FIG. 6 (C)

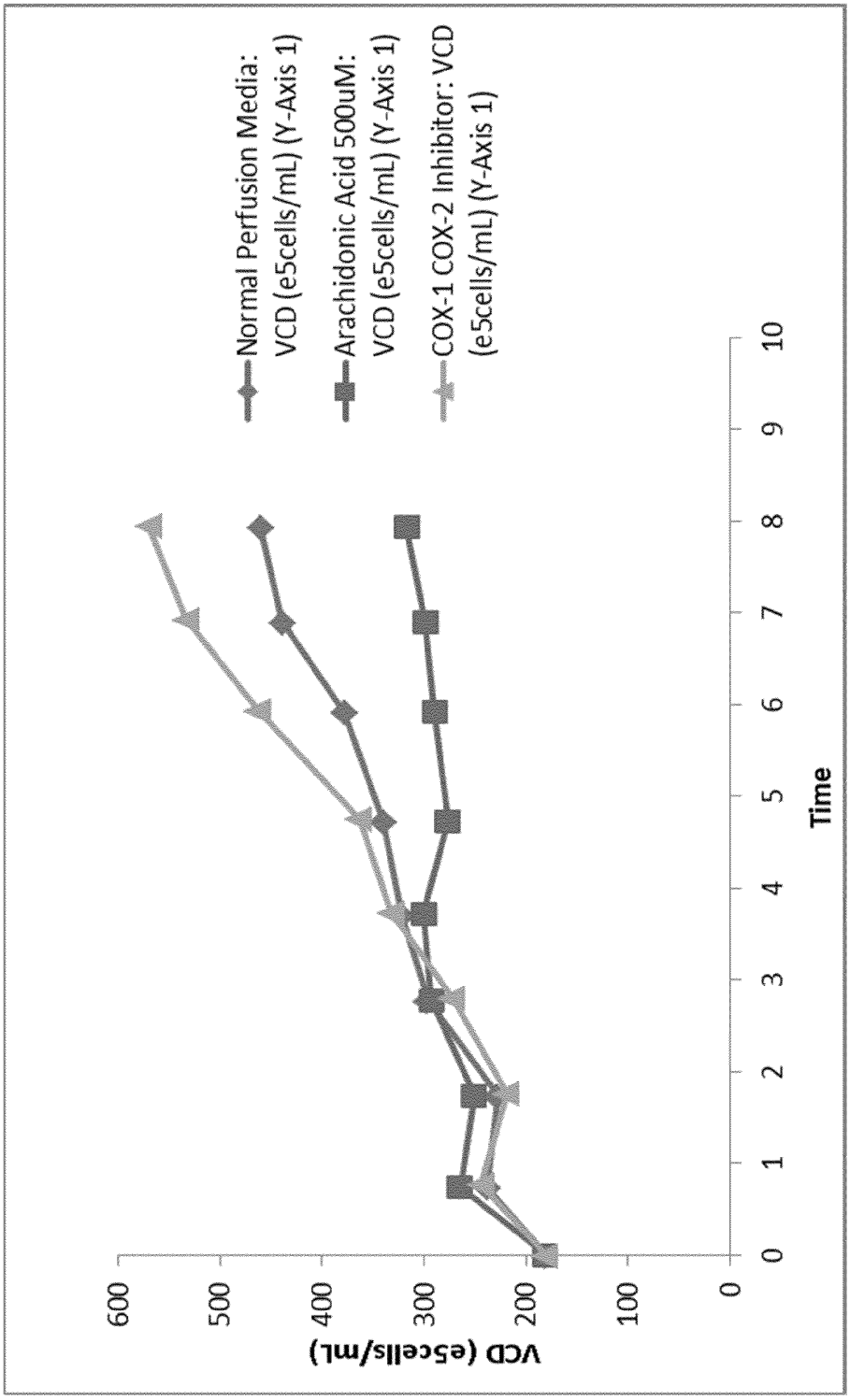

Normal Perfusion Media: VCD (e5cells/mL) (Y-Axis 1)
Arachidonic Acid 500uM: VCD (e5cells/mL) (Y-Axis 1)
COX-1 COX-2 Inhibitor: VCD (e5cells/mL) (Y-Axis 1)
VCD (e5cells/mL)
600
500
400
300
200
100
0
0
1
2
3
4
5
6
7
8
9
10
Time

FIG. 7 (A)

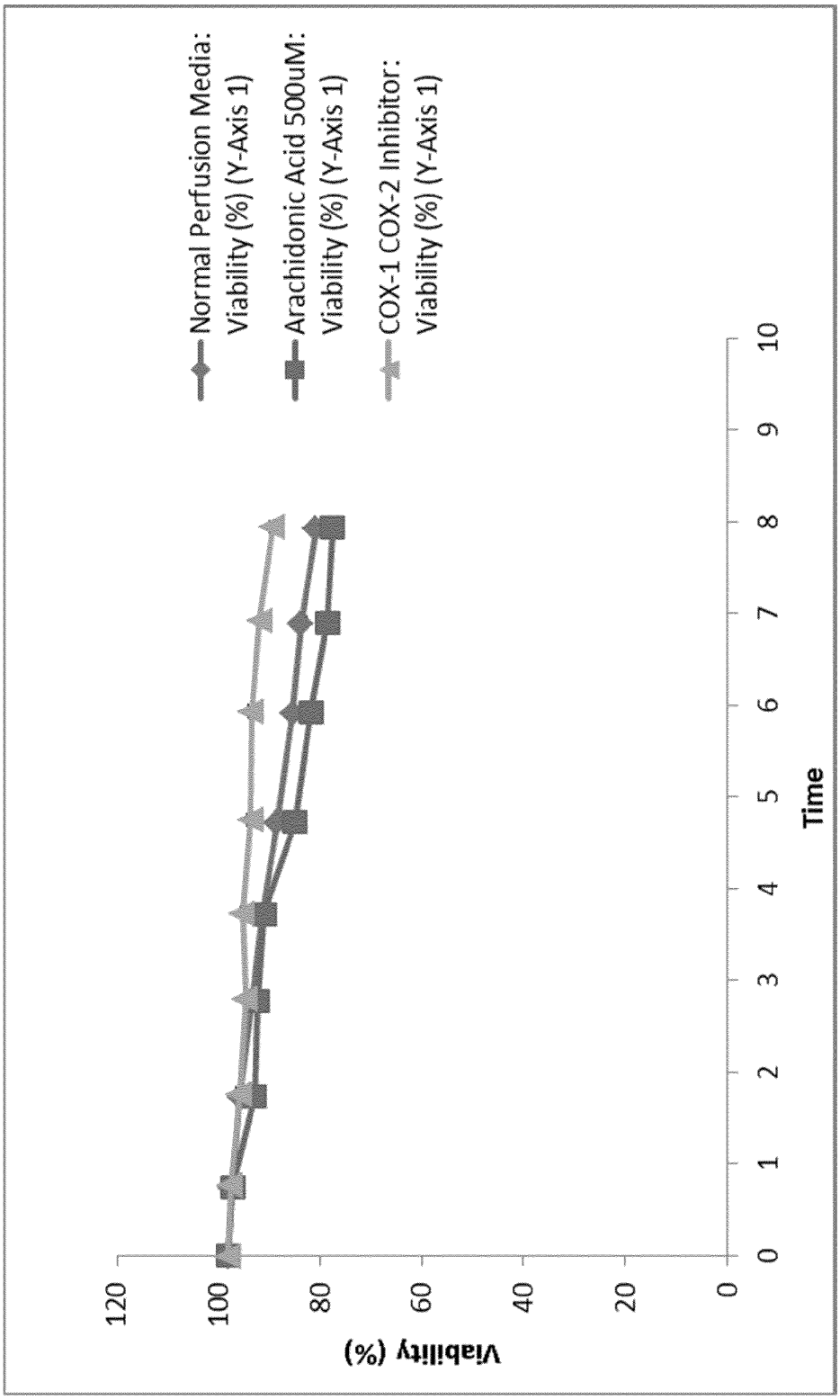

Normal Perfusion Media: Viability (%) (Y-Axis 1)
Arachidonic Acid 500uM: Viability (%) (Y-Axis 1)
COX-1 COX-2 Inhibitor: Viability (%) (Y-Axis 1)
Viability (%)
120
100
80
60
40
20
0
0
1
2
3
4
5
6
7
8
9
10
Time

FIG. 7 (B)

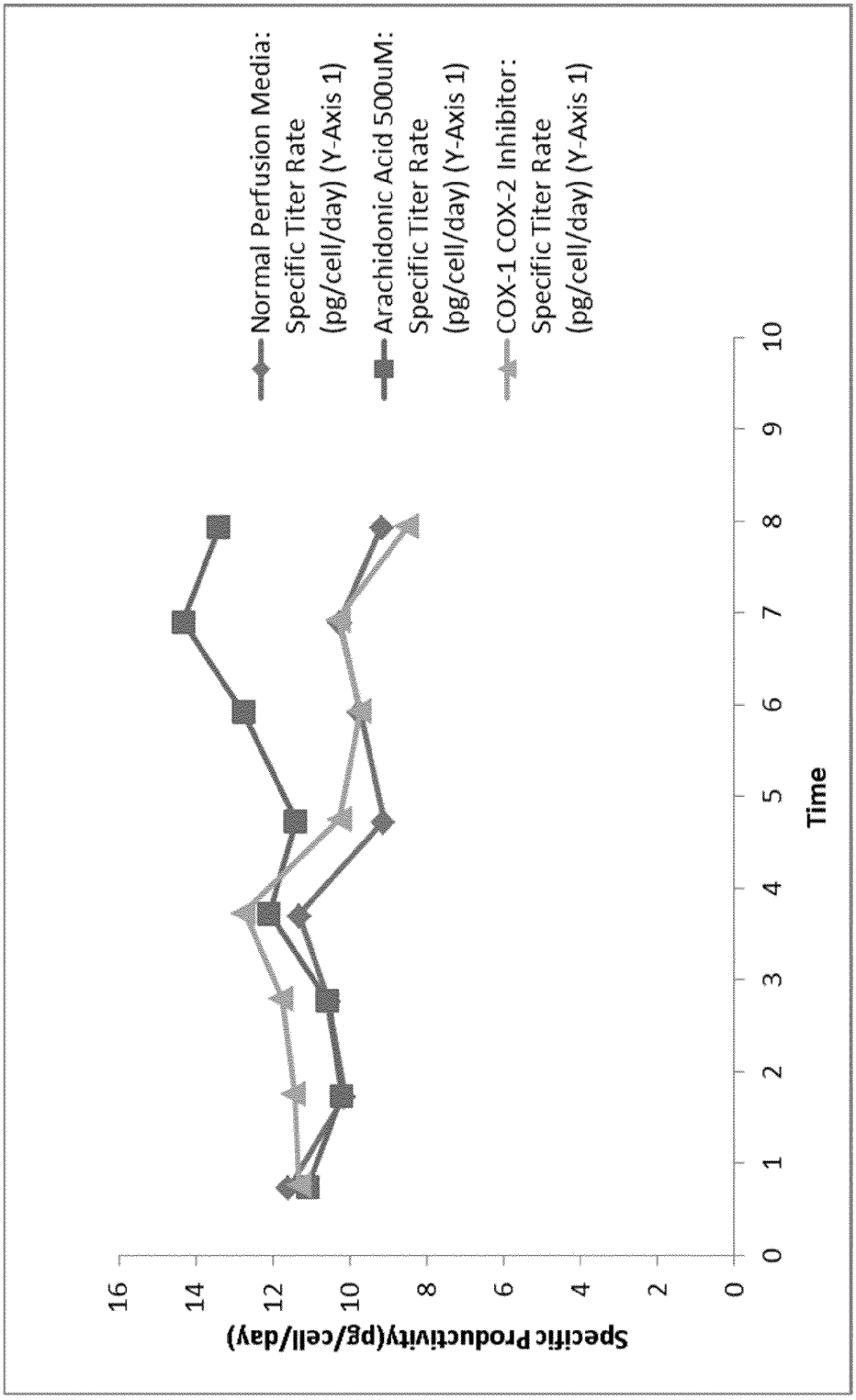

Normal Perfusion Media: Specific Titer Rate (pg/cell/day) (Y-Axis 1)
Arachidonic Acid 500uM: Specific Titer Rate (pg/cell/day) (Y-Axis 1)
COX-1 COX-2 Inhibitor: Specific Titer Rate (pg/cell/day) (Y-Axis 1)
Specific Productivity(pg/cell/day)
Time
0
2
4
6
8
10
12
14
16
0
1
2
3
4
5
6
7
8
9
10

FIG. 7 (C)