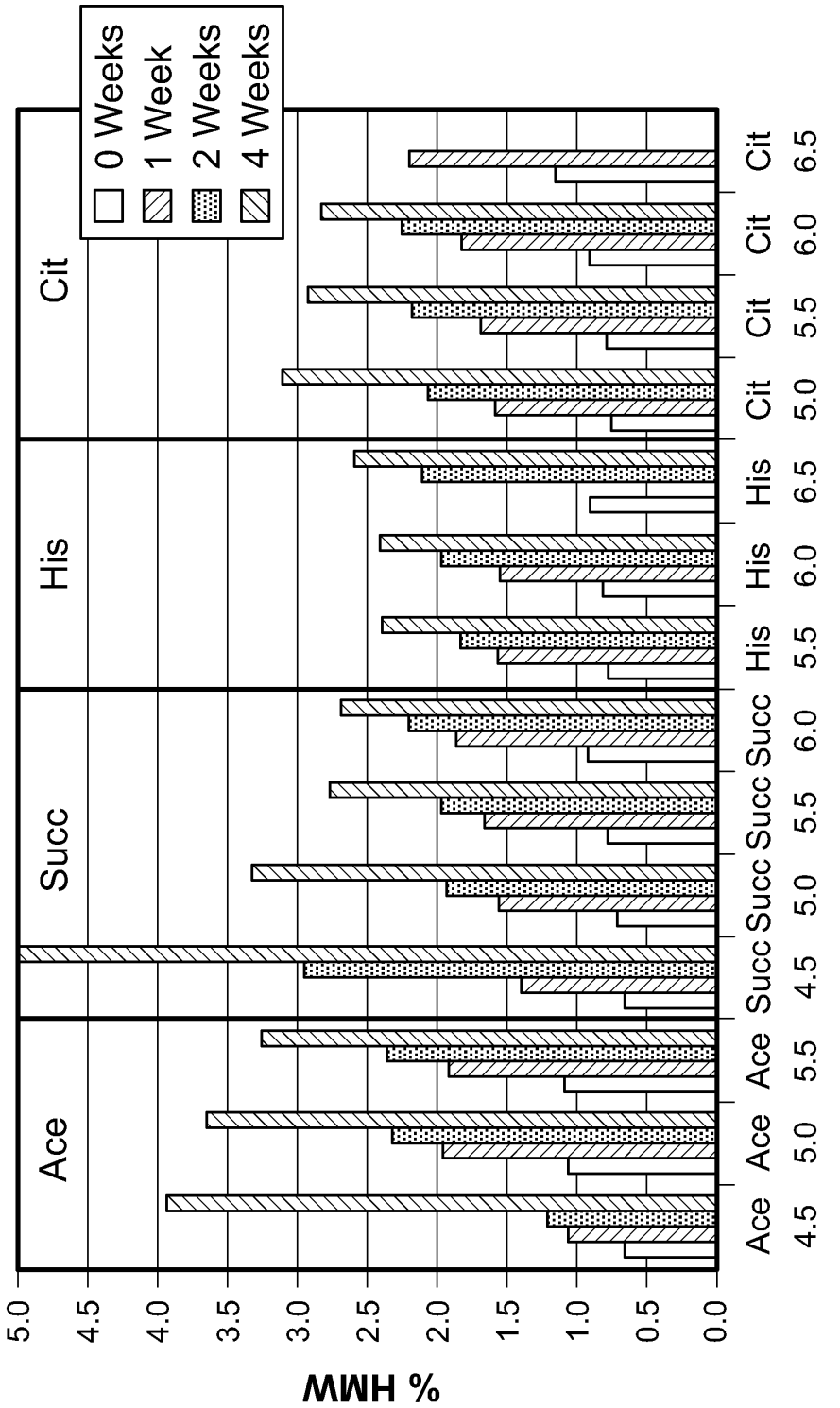

0 Weeks
1 Week
2 Weeks
4 Weeks
Ace
Succ
His
Cit
MWH %
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Ace 4.5
Ace 5.0
Ace 5.5
Succ 4.5
Succ 5.0
Succ 5.5
Succ 6.0
His 5.5
His 6.0
His 6.5
Cit 5.0
Cit 5.5
Cit 6.0
Cit 6.5

FIGURE 1

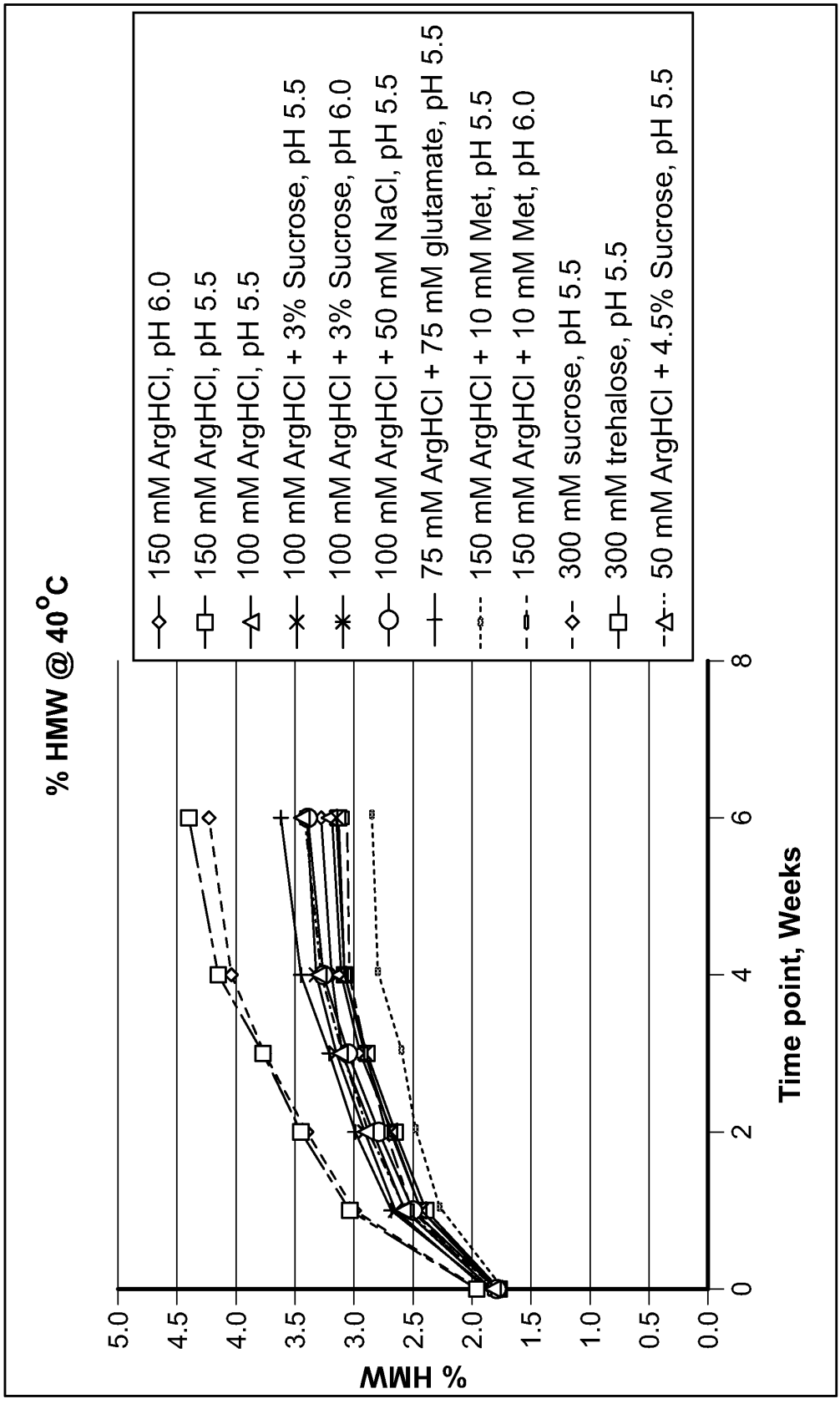
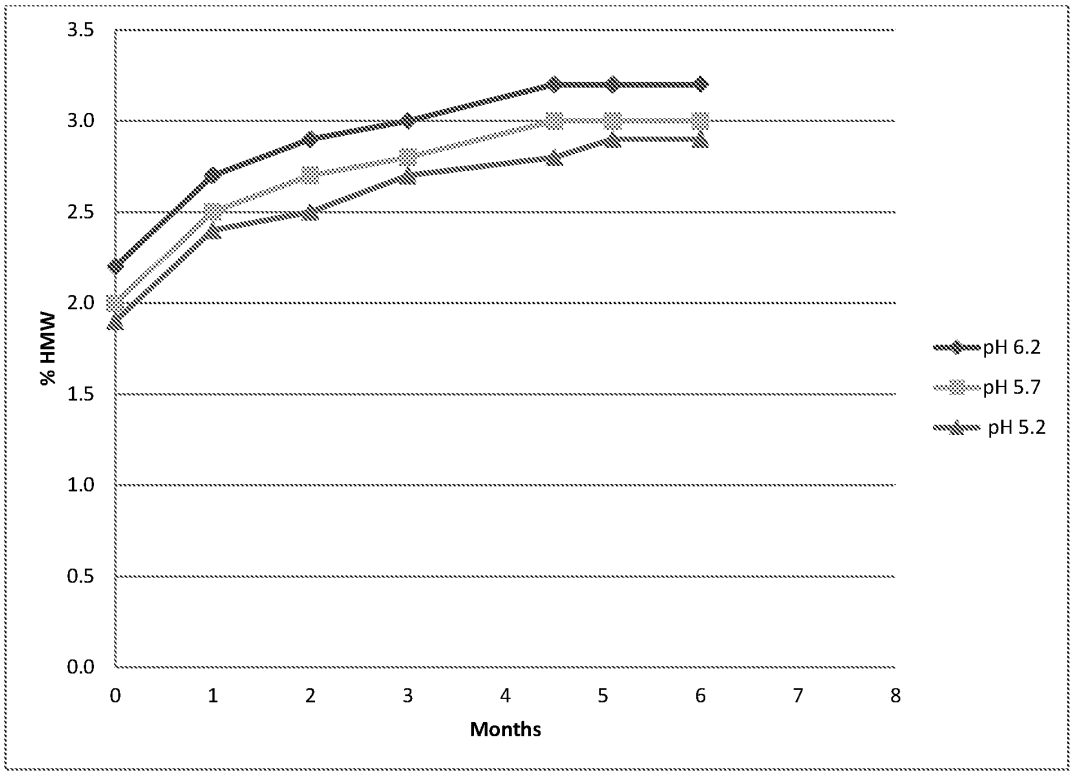

% HMW @ 40°C
% HMW
Time point, Weeks
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
0
2
4
6
8
150 mM ArgHCl, pH 6.0
150 mM ArgHCl, pH 5.5
100 mM ArgHCl, pH 5.5
100 mM ArgHCl + 3% Sucrose, pH 5.5
100 mM ArgHCl + 3% Sucrose, pH 6.0
100 mM ArgHCl + 50 mM NaCl, pH 5.5
75 mM ArgHCl + 75 mM glutamate, pH 5.5
150 mM ArgHCl + 10 mM Met, pH 5.5
150 mM ArgHCl + 10 mM Met, pH 6.0
300 mM sucrose, pH 5.5
300 mM trehalose, pH 5.5
50 mM ArgHCl + 4.5% Sucrose, pH 5.5

FIGURE 2

FIGURE 3



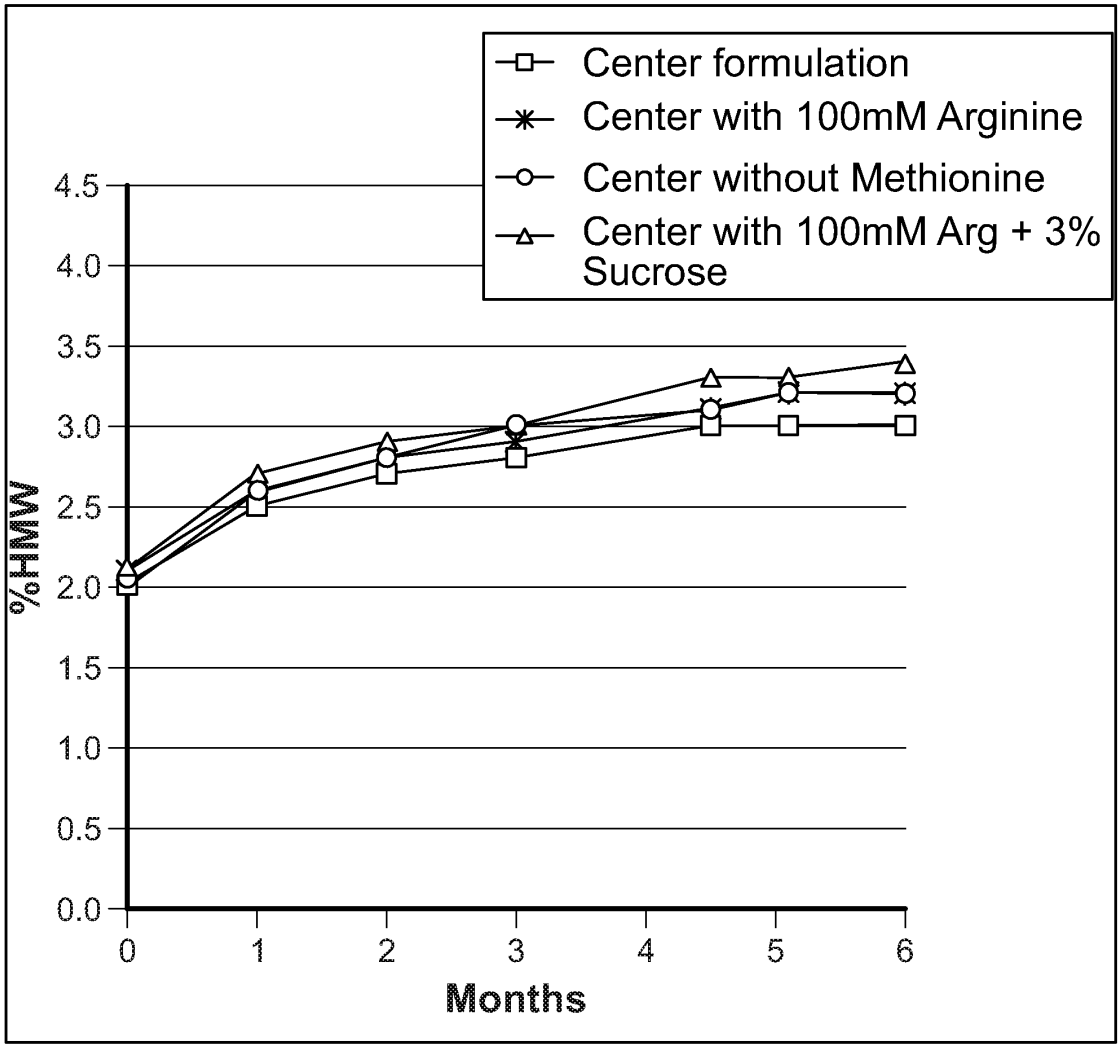

Center formulation
Center with 100mM Arginine
Center without Methionine
Center with 100mM Arg + 3% Sucrose
%HMW
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
1
2
3
4
5
6
Months

FIGURE 4

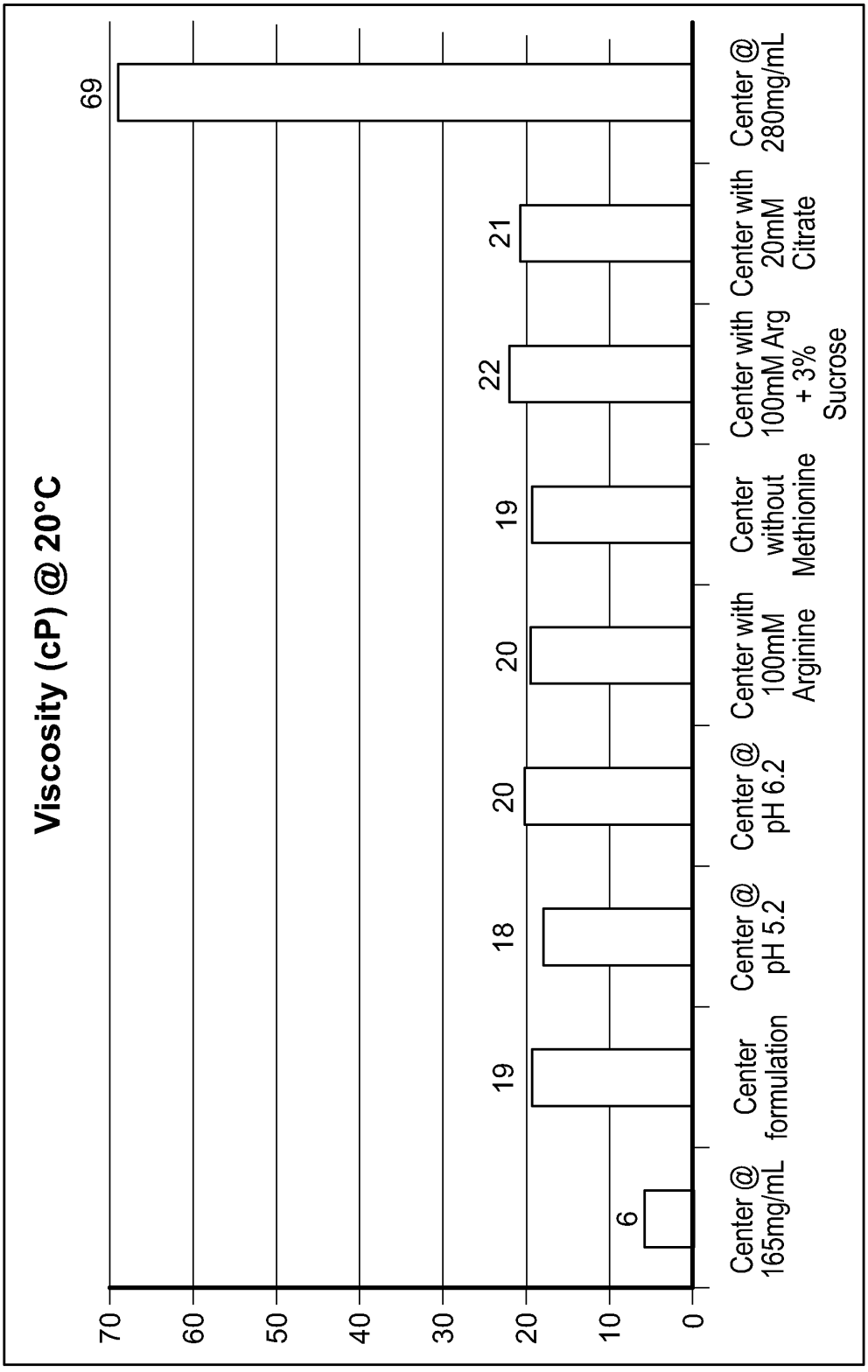

Viscosity (cP) @ 20°C
70
60
50
40
30
20
10
0
6
19
18
20
20
19
22
21
69
Center @ 165mg/mL
Center formulation
Center @ pH 5.2
Center @ pH 6.2
Center with 100mM Arginine
Center without Methionine
Center with 100mM Arg + 3% Sucrose
Center with 20mM Citrate
Center @ 280mg/mL

FIGURE 5

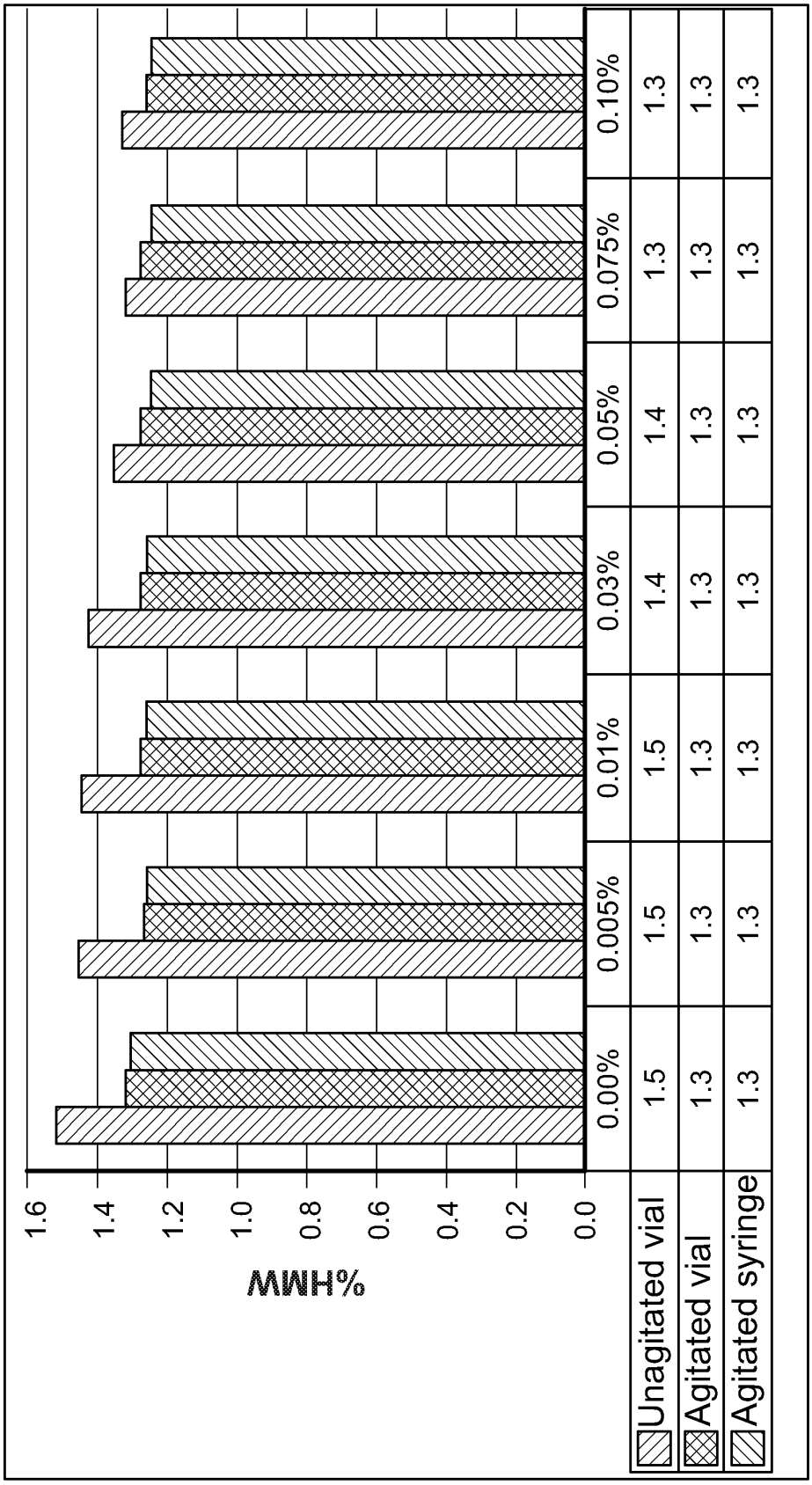
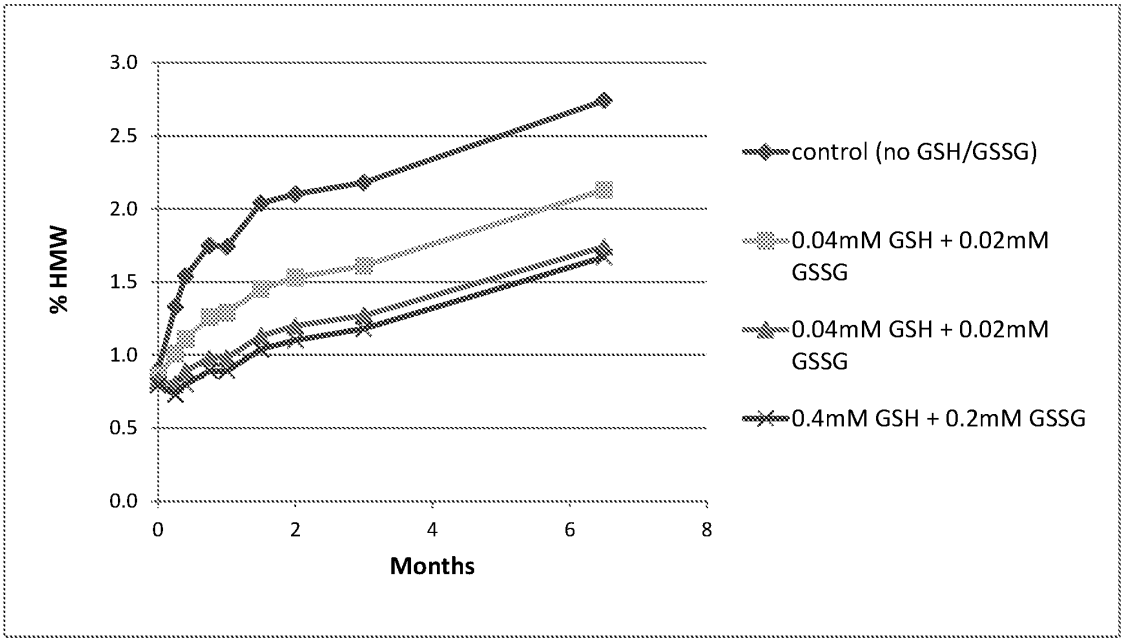

MWH%
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Unagitated vial
Agitated vial
Agitated syringe
0.00% 1.5 1.3 1.3
0.005% 1.5 1.3 1.3
0.01% 1.5 1.3 1.3
0.03% 1.4 1.3 1.3
0.05% 1.4 1.3 1.3
0.075% 1.3 1.3 1.3
0.10% 1.3 1.3 1.3

FIGURE 6

FIGURE 7


3.0
2.5
2.0
1.5
1.0
0.5
0.0
% HMW
0
2
4
6
8
Months
control (no GSH/GSSG)
0.04mM GSH + 0.02mM GSSG
0.04mM GSH + 0.02mM GSSG
0.4mM GSH + 0.2mM GSSG

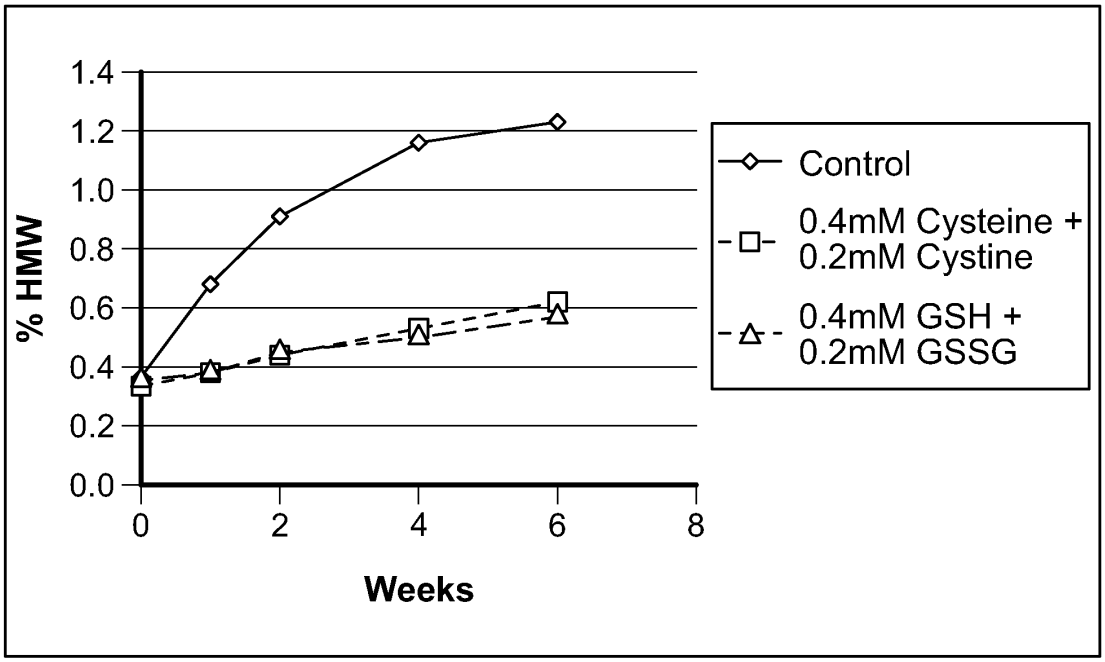

1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
% HMW
0
2
4
6
8
Weeks
Control
0.4mM Cysteine + 0.2mM Cystine
0.4mM GSH + 0.2mM GSSG

FIGURE 8

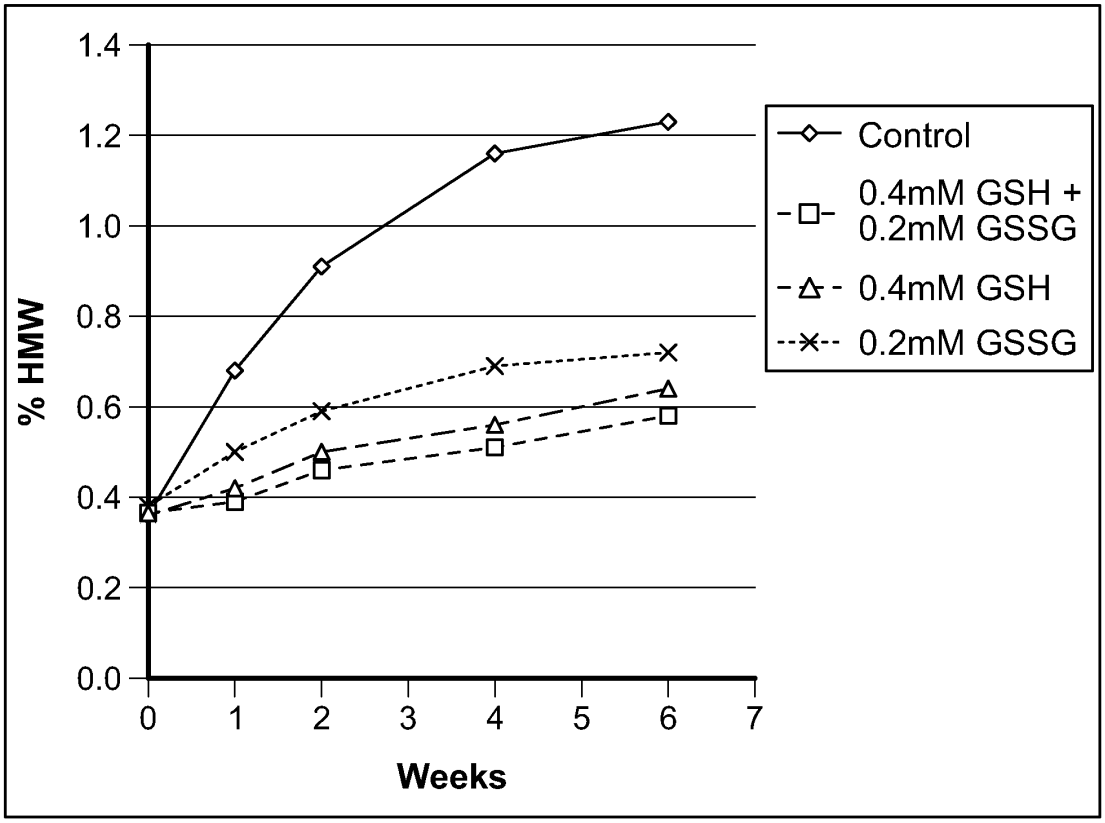

1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
% HMW
0
1
2
3
4
5
6
7
Weeks
Control
0.4mM GSH + 0.2mM GSSG
0.4mM GSH
0.2mM GSSG

FIGURE 9

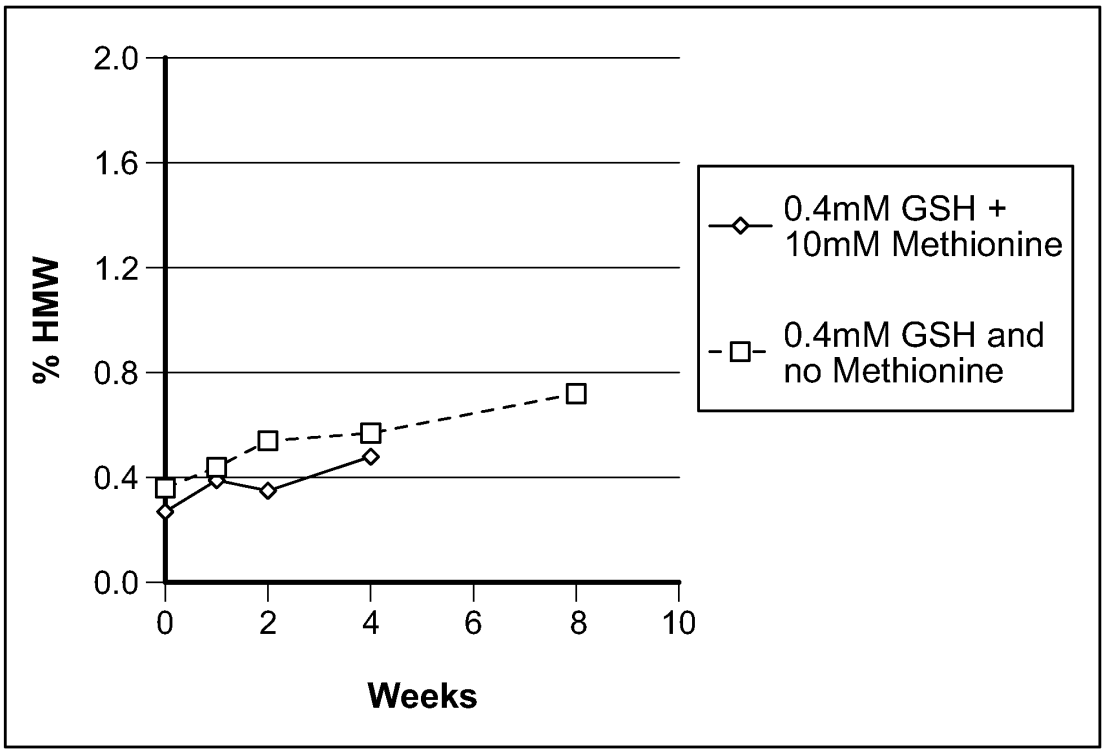
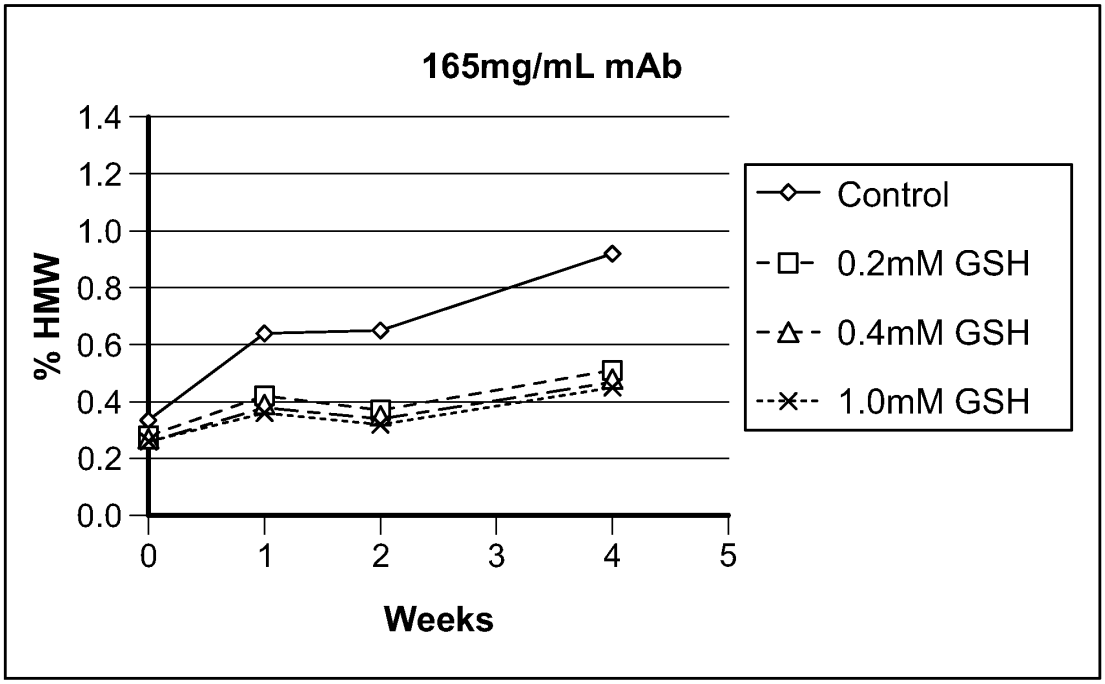

2.0
1.6
1.2
0.8
0.4
0.0
% HMW
0
2
4
6
8
10
Weeks
0.4mM GSH + 10mM Methionine
0.4mM GSH and no Methionine

FIGURE 10


165mg/mL mAb
% HMW
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
1
2
3
4
5
Weeks
Control
0.2mM GSH
0.4mM GSH
1.0mM GSH

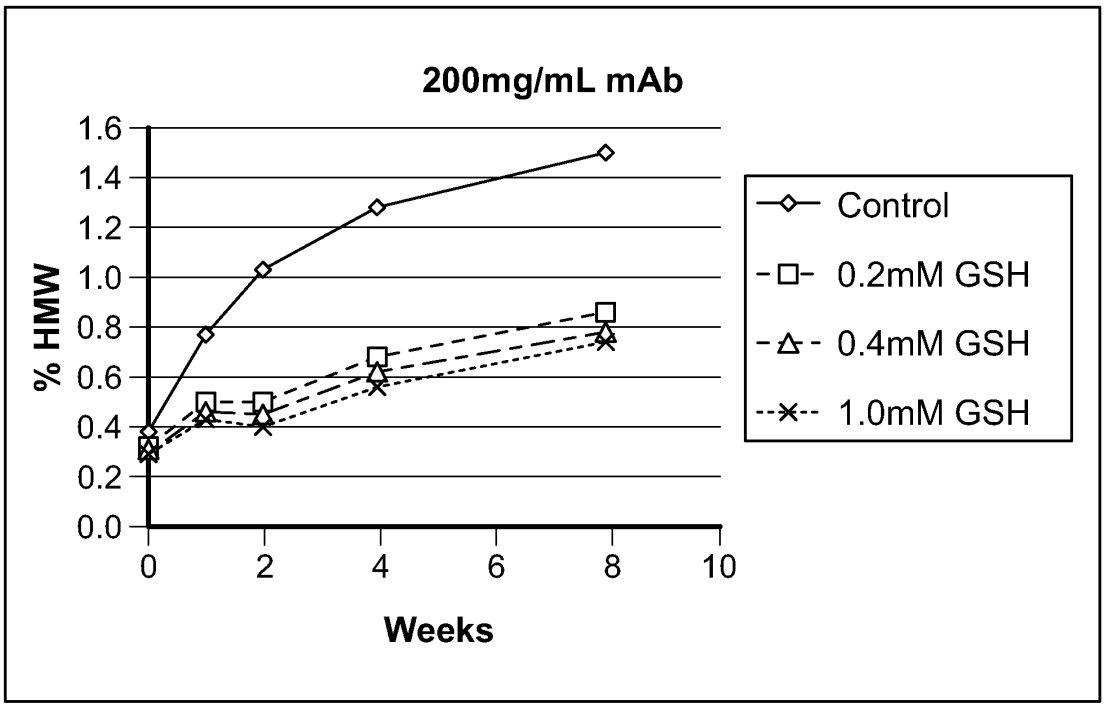
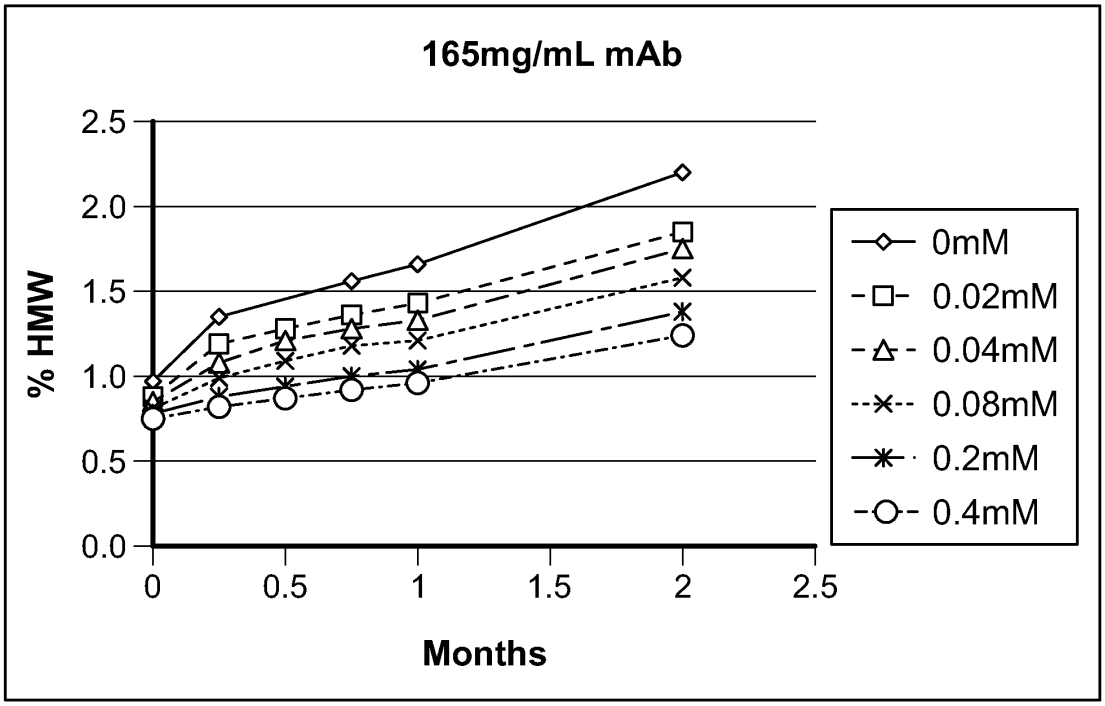

200mg/mL mAb
% HMW
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
2
4
6
8
10
Weeks
Control
0.2mM GSH
0.4mM GSH
1.0mM GSH

FIGURE 11


165mg/mL mAb
% HMW
2.5
2.0
1.5
1.0
0.5
0.0
0
0.5
1
1.5
2
2.5
Months
0mM
0.02mM
0.04mM
0.08mM
0.2mM
0.4mM

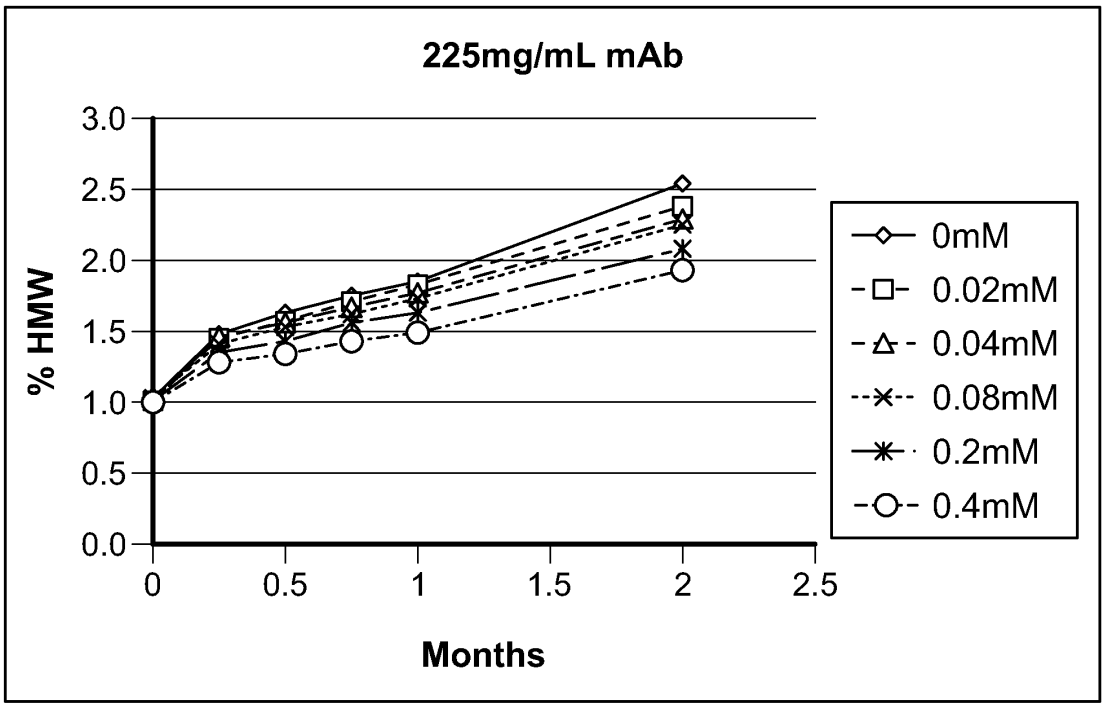

225mg/mL mAb
% HMW
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
0.5
1
1.5
2
2.5
Months
0mM
0.02mM
0.04mM
0.08mM
0.2mM
0.4mM

FIGURE 12

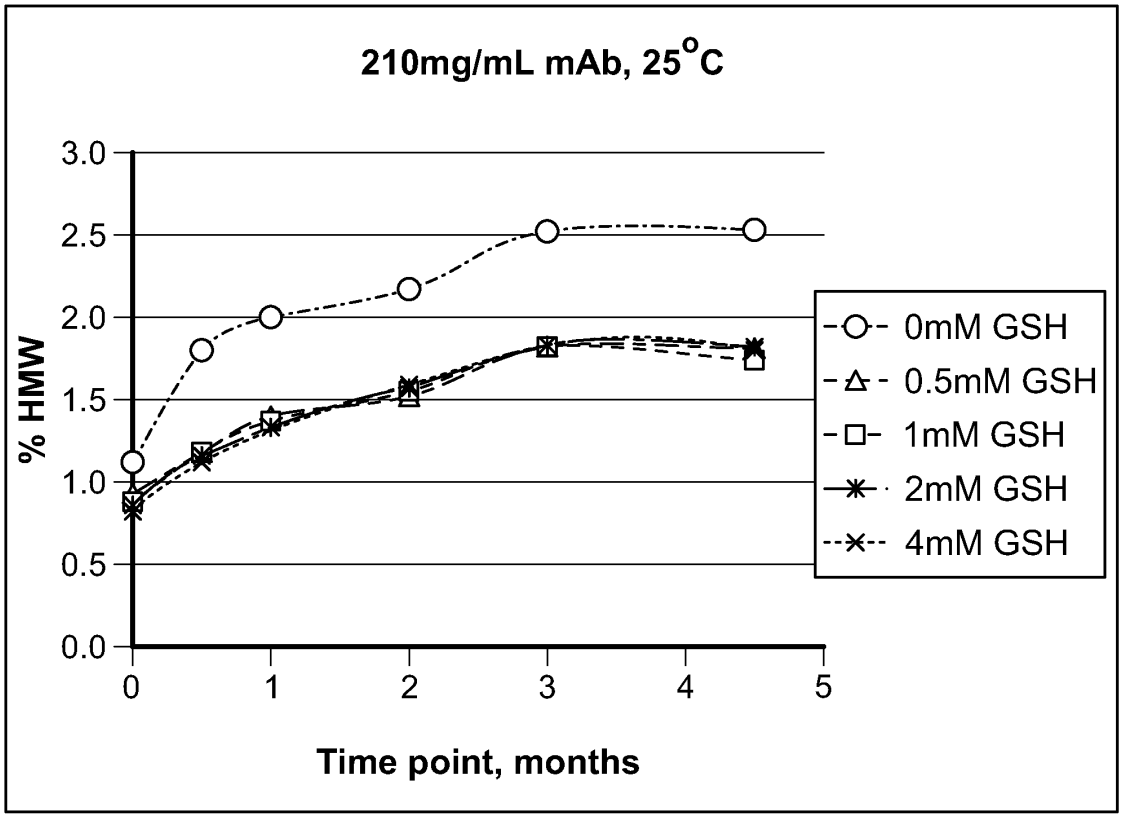
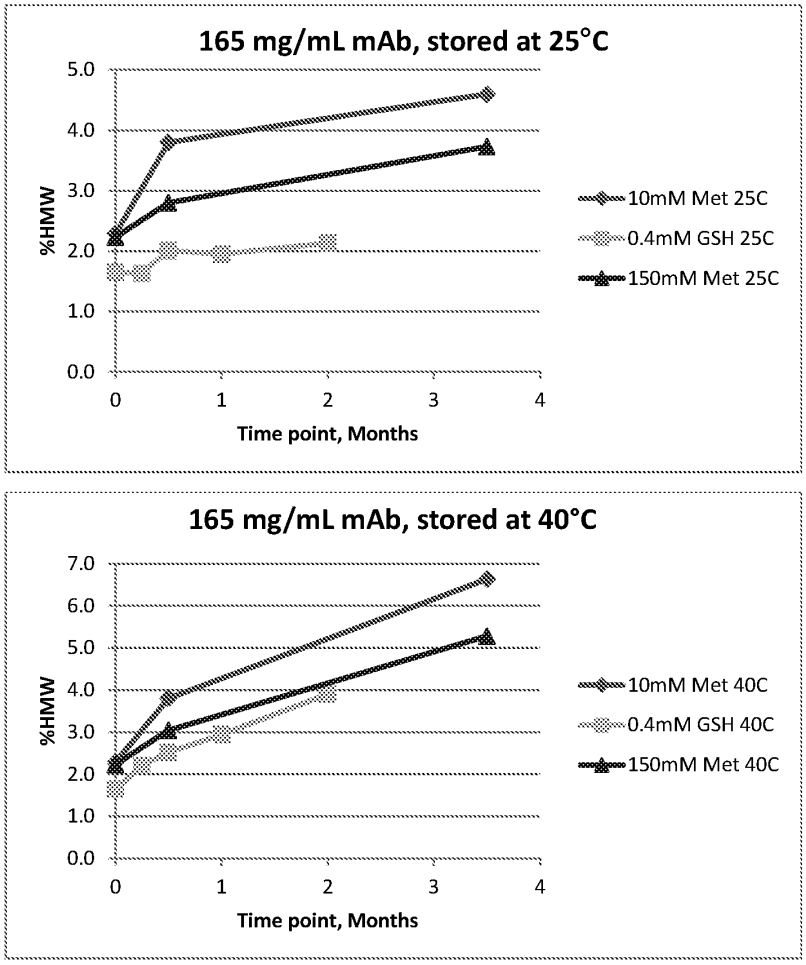

210mg/mL mAb, 25°C
% HMW
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
1
2
3
4
5
Time point, months
0mM GSH
0.5mM GSH
1mM GSH
2mM GSH
4mM GSH

FIGURE 13

FIGURE 14


165 mg/mL mAb, stored at 25°C
%HMW
5.0
4.0
3.0
2.0
1.0
0.0
0
1
2
3
4
Time point, Months
10mM Met 25C
0.4mM GSH 25C
150mM Met 25C
165 mg/mL mAb, stored at 40°C
%HMW
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0
1
2
3
4
Time point, Months
10mM Met 40C
0.4mM GSH 40C
150mM Met 40C