Figure 1

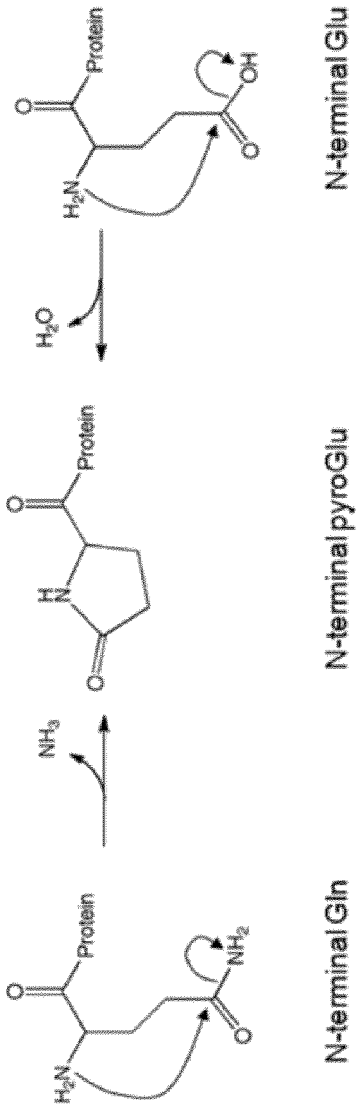

Protein
OH
H_2N
H_2O
N-terminal Glu
Protein
H
N
O
NH_3
N-terminal pyroGlu
Protein
NH_2
H_2N
N-terminal Gln

Figure 2

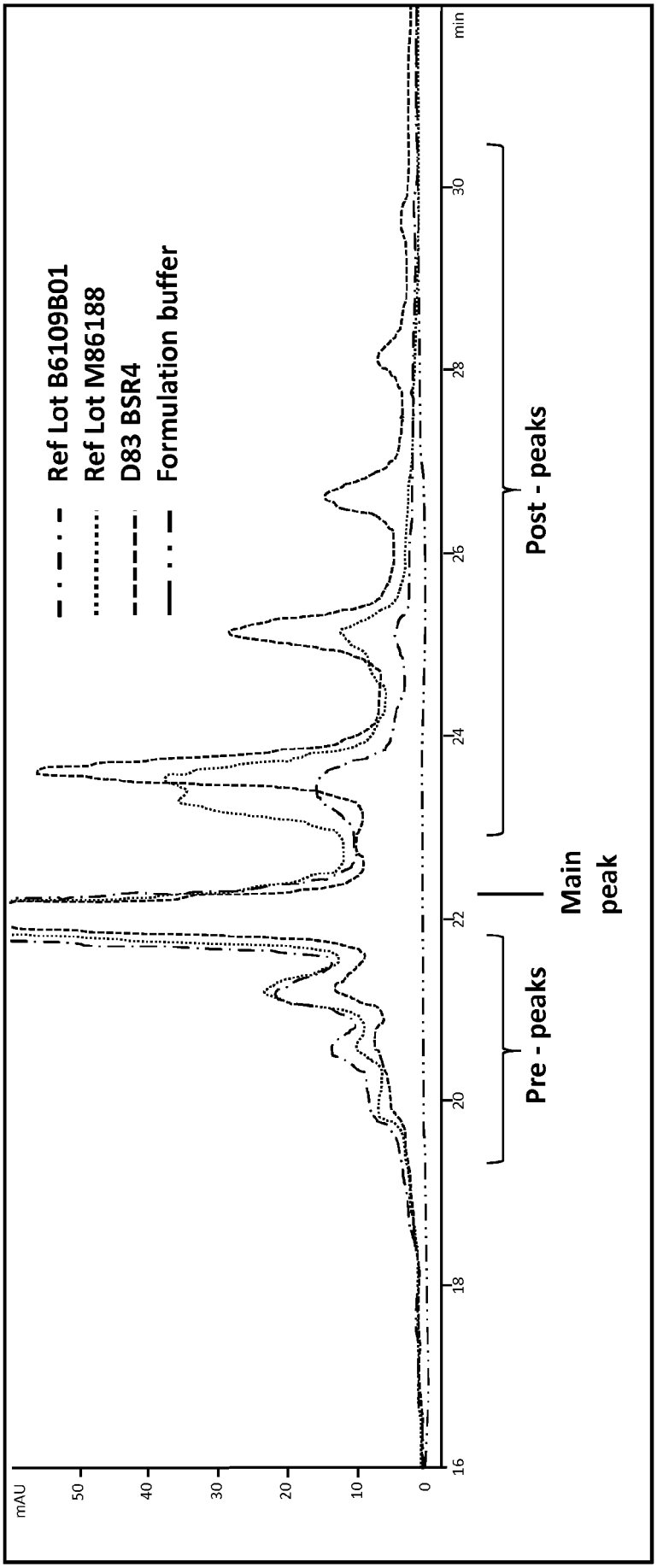

Ref Lot B6109B01
Ref Lot M86188
D83 BSR4
Formulation buffer
mAU
50
40
30
20
10
0
16
18
20
22
24
26
28
30
min
Pre - peaks
Main peak
Post - peaks

Figure 3

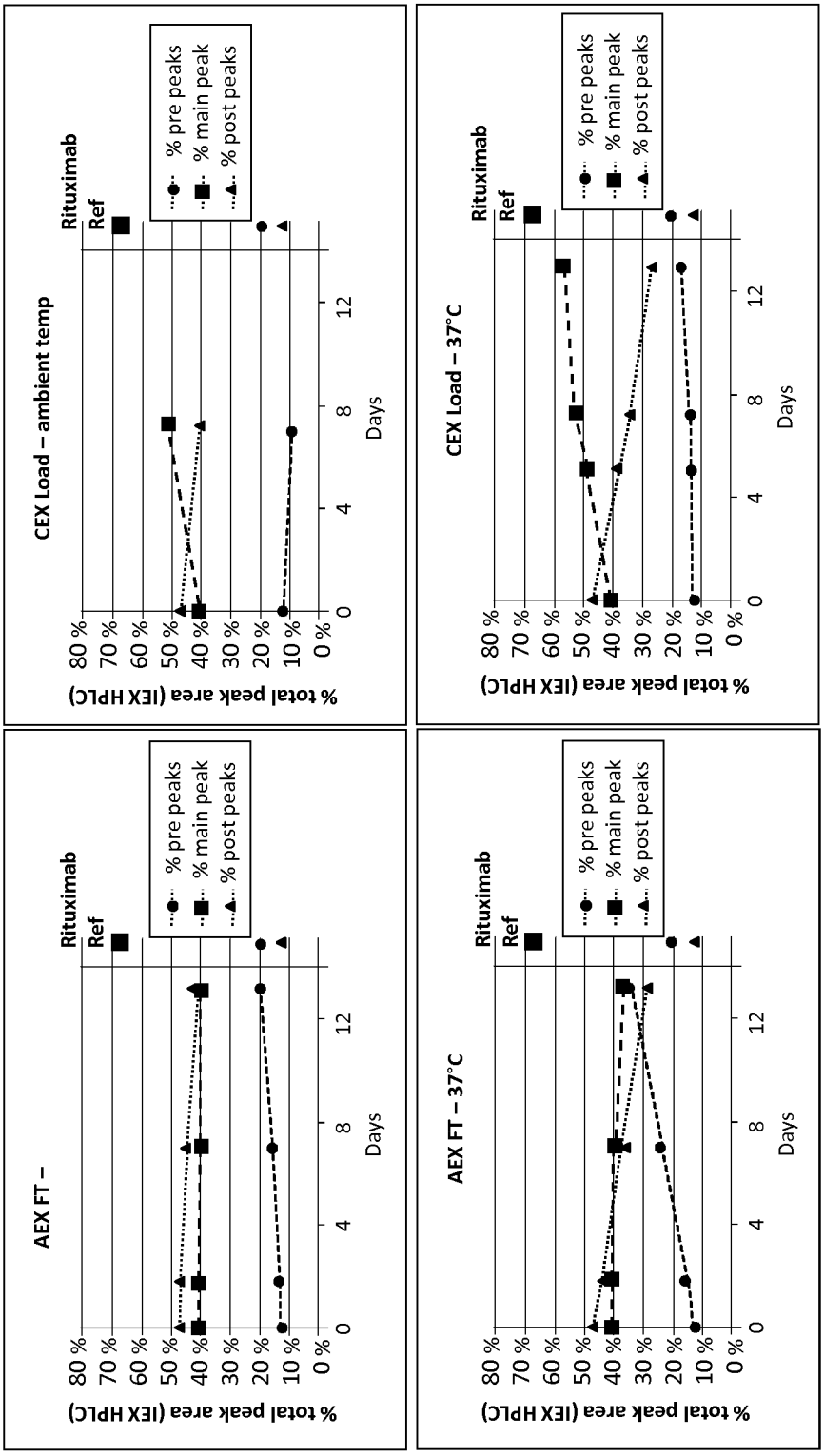

CEX Load – ambient temp
CEX Load – 37°C
AEX FT –
AEX FT – 37°C
Rituximab
Ref
% pre peaks
% main peak
% post peaks
% total peak area (IEX HPLC)
Days
0 %
10 %
20 %
30 %
40 %
50 %
60 %
70 %
80 %
0
4
8
12

Figure 4

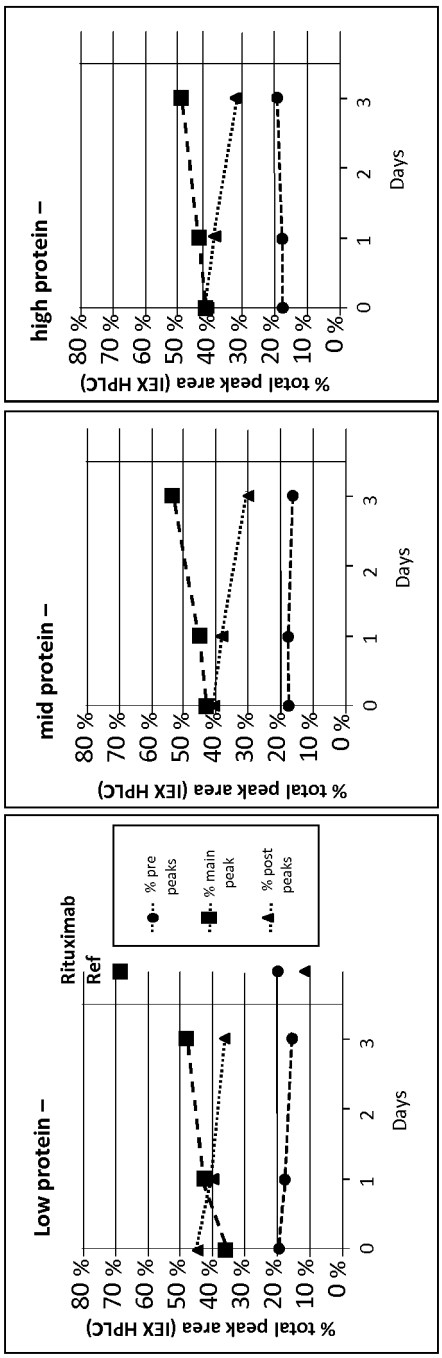

Low protein –
Rituximab
Ref
% pre peaks
% main peak
% post peaks
% total peak area (IEX HPLC)
80 %
70 %
60 %
50 %
40 %
30 %
20 %
10 %
0 %
0
1
2
3
Days
mid protein –
high protein –

Figure 4 (cont.)

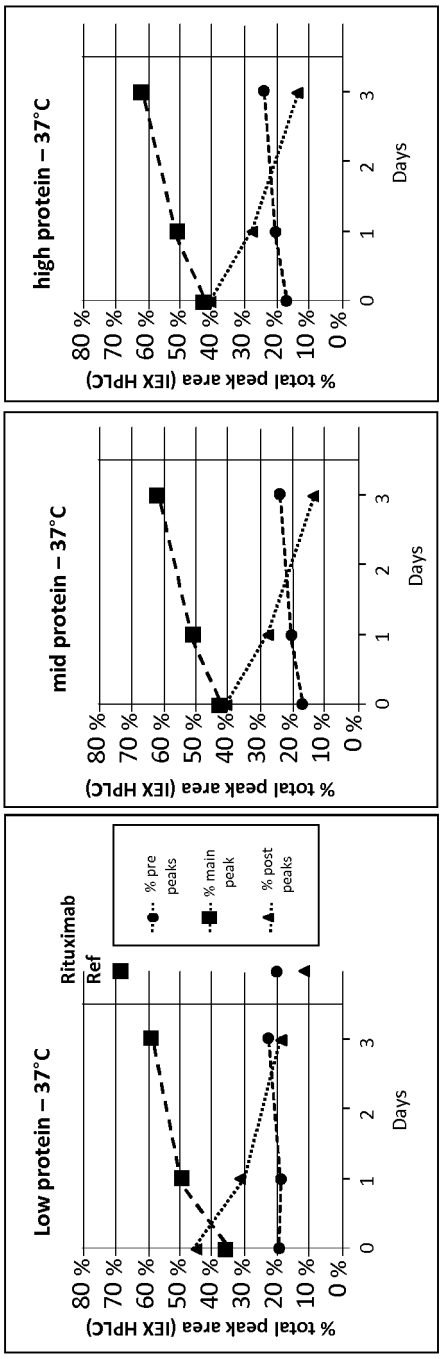


Figure 4 (cont.)

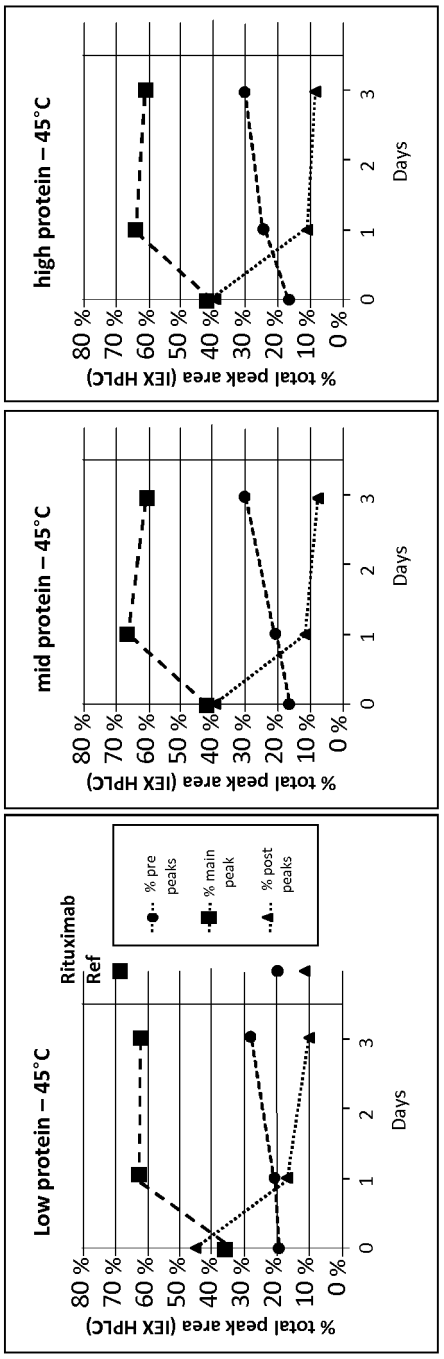
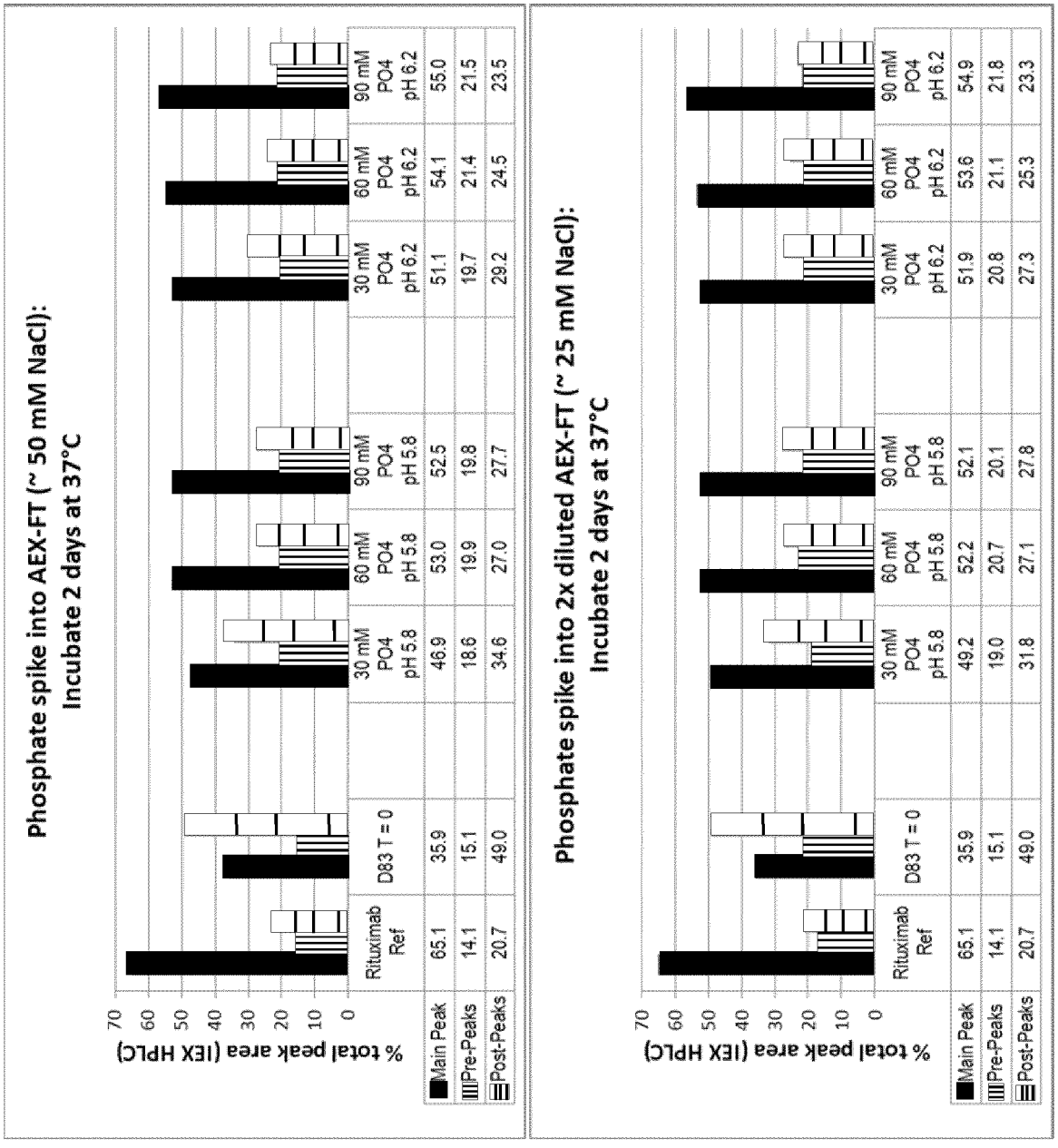


Figure 5


Phosphate spike into AEX-FT (~ 50 mM NaCl):
Incubate 2 days at 37°C
% total peak area (IEX HPLC)
0
10
20
30
40
50
60
70
Rituximab Ref
D83 T = 0
30 mM PO4 pH 5.8
60 mM PO4 pH 5.8
90 mM PO4 pH 5.8
30 mM PO4 pH 6.2
60 mM PO4 pH 6.2
90 mM PO4 pH 6.2
Main Peak 65.1 35.9 46.9 53.0 52.5 51.1 54.1 55.0
Pre-Peaks 14.1 15.1 18.6 19.9 19.8 19.7 21.4 21.5
Post-Peaks 20.7 49.0 34.6 27.0 27.7 29.2 24.5 23.5
Phosphate spike into 2x diluted AEX-FT (~ 25 mM NaCl):
Incubate 2 days at 37°C
% total peak area (IEX HPLC)
0
10
20
30
40
50
60
70
Rituximab Ref
D83 T = 0
30 mM PO4 pH 5.8
60 mM PO4 pH 5.8
90 mM PO4 pH 5.8
30 mM PO4 pH 6.2
60 mM PO4 pH 6.2
90 mM PO4 pH 6.2
Main Peak 65.1 35.9 49.2 52.2 52.1 51.9 53.6 54.9
Pre-Peaks 14.1 15.1 19.0 20.7 20.1 20.8 21.1 21.8
Post-Peaks 20.7 49.0 31.8 27.1 27.8 27.3 25.3 23.3