Fig 1:

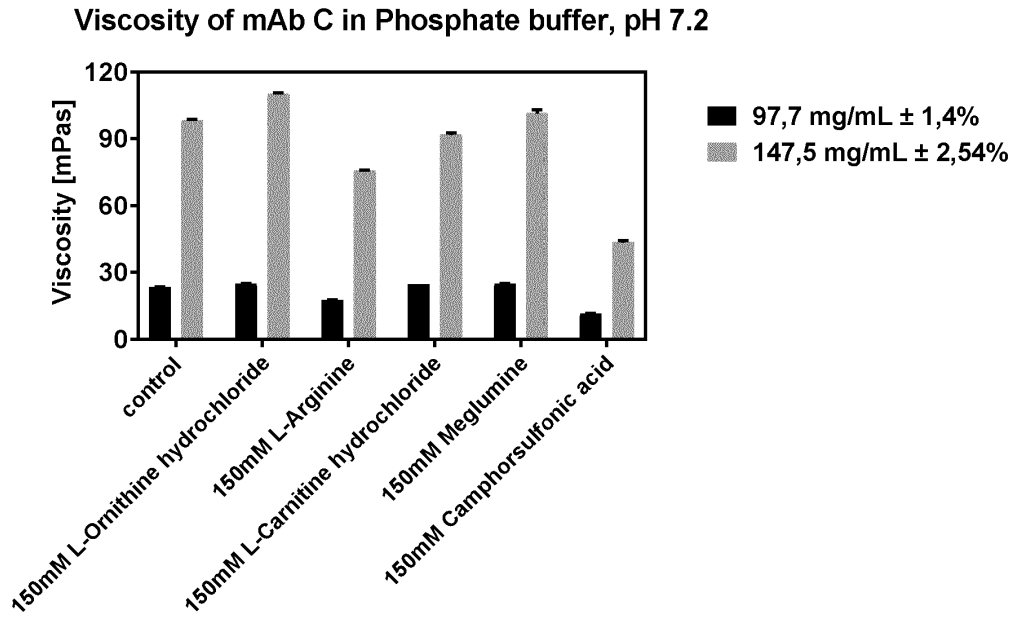

Viscosity of mAb C in Phosphate buffer, pH 7.2
Viscosity [mPas]
120
90
60
30
0
control
150mM L-Ornithine hydrochloride
150mM L-Arginine
150mM L-Carnitine hydrochloride
150mM Meglumine
150mM Camphorsulfonic acid
97,7 mg/mL ± 1,4%
147,5 mg/mL ± 2,54%

Fig 2:

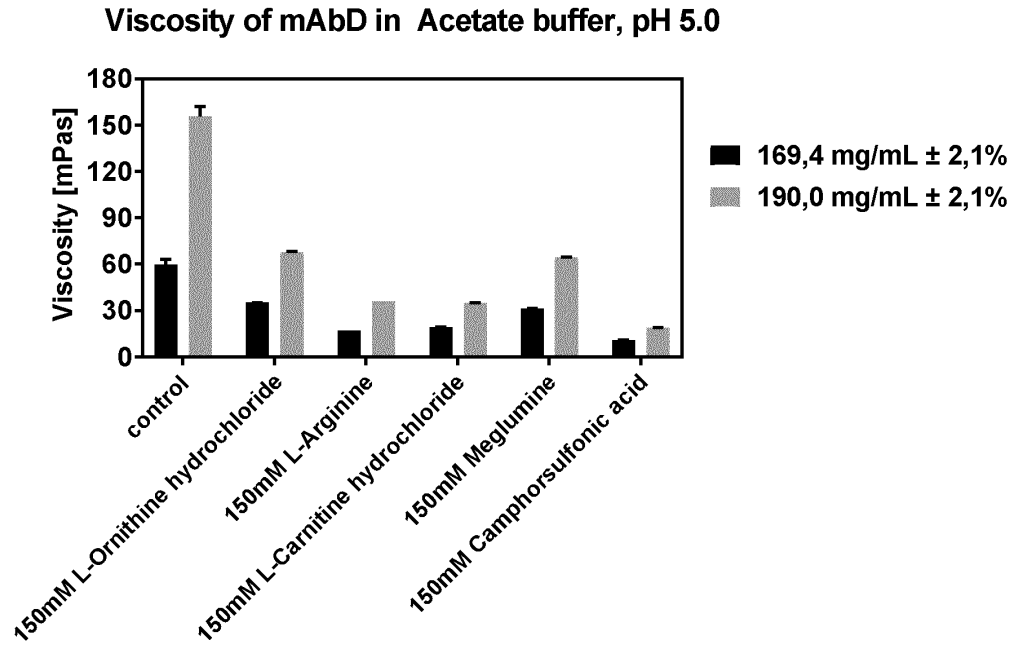

Viscosity of mAbD in Acetate buffer, pH 5.0
Viscosity [mPas]
180
150
120
90
60
30
0
control
150mM L-Ornithine hydrochloride
150mM L-Arginine
150mM L-Carnitine hydrochloride
150mM Meglumine
150mM Camphorsulfonic acid
169,4 mg/mL ± 2,1%
190,0 mg/mL ± 2,1%

Fig 3:

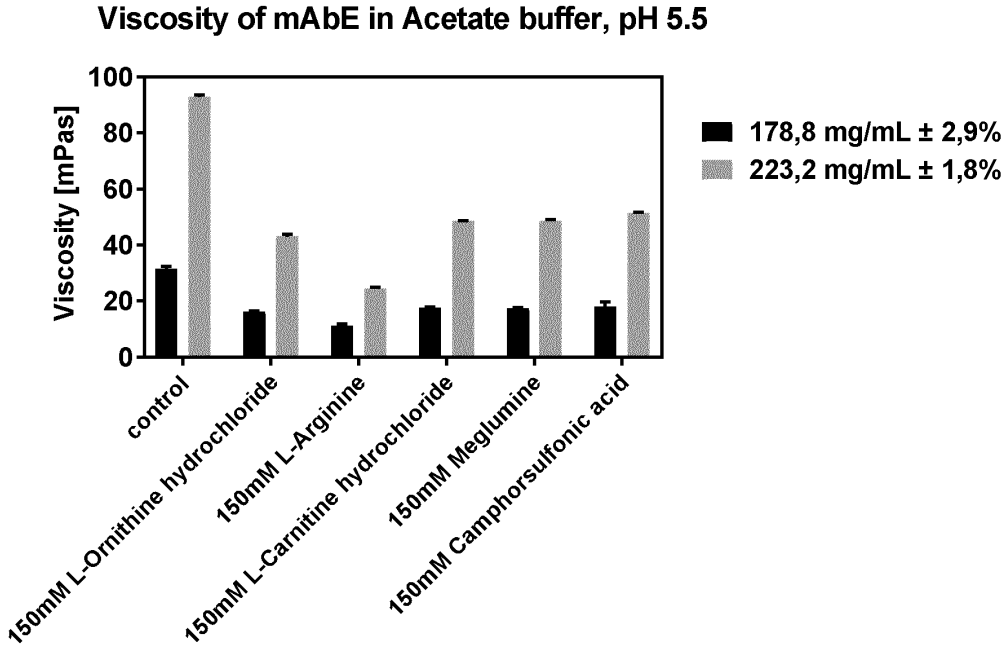

Viscosity of mAbE in Acetate buffer, pH 5.5
Viscosity [mPas]
100
80
60
40
20
0
178,8 mg/mL ± 2,9%
223,2 mg/mL ± 1,8%
control
150mM L-Ornithine hydrochloride
150mM L-Arginine
150mM L-Carnitine hydrochloride
150mM Meglumine
150mM Camphorsulfonic acid

Fig 4:

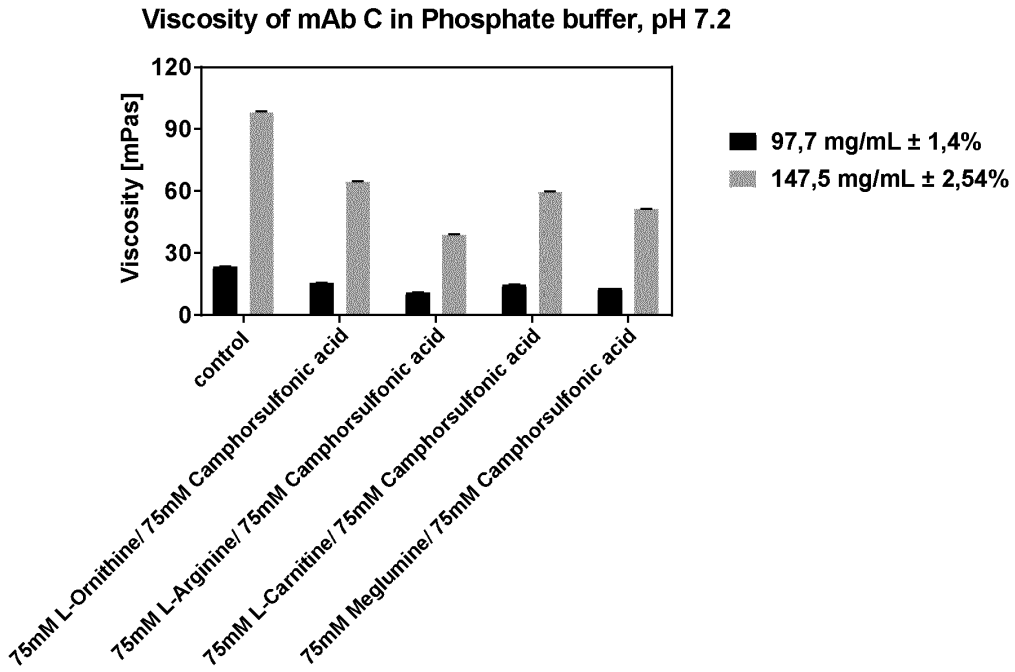

Viscosity of mAb C in Phosphate buffer, pH 7.2
Viscosity [mPas]
120
90
60
30
0
control
75mM L-Ornithine/ 75mM Camphorsulfonic acid
75mM L-Arginine/ 75mM Camphorsulfonic acid
75mM L-Carnitine/ 75mM Camphorsulfonic acid
75mM Meglumine/ 75mM Camphorsulfonic acid
97,7 mg/mL ± 1,4%
147,5 mg/mL ± 2,54%

Fig 5:

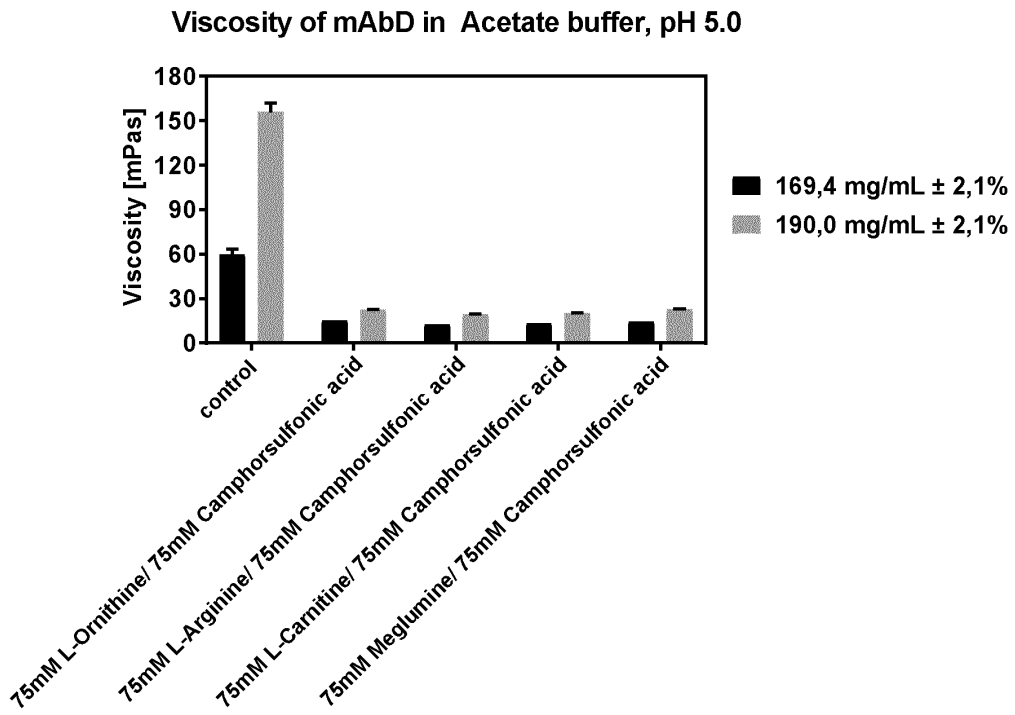

Viscosity of mAbD in Acetate buffer, pH 5.0
Viscosity [mPas]
180
150
120
90
60
30
0
169,4 mg/mL ± 2,1%
190,0 mg/mL ± 2,1%
control
75mM L-Ornithine/ 75mM Camphorsulfonic acid
75mM L-Arginine/ 75mM Camphorsulfonic acid
75mM L-Carnitine/ 75mM Camphorsulfonic acid
75mM Meglumine/ 75mM Camphorsulfonic acid

Fig 6:

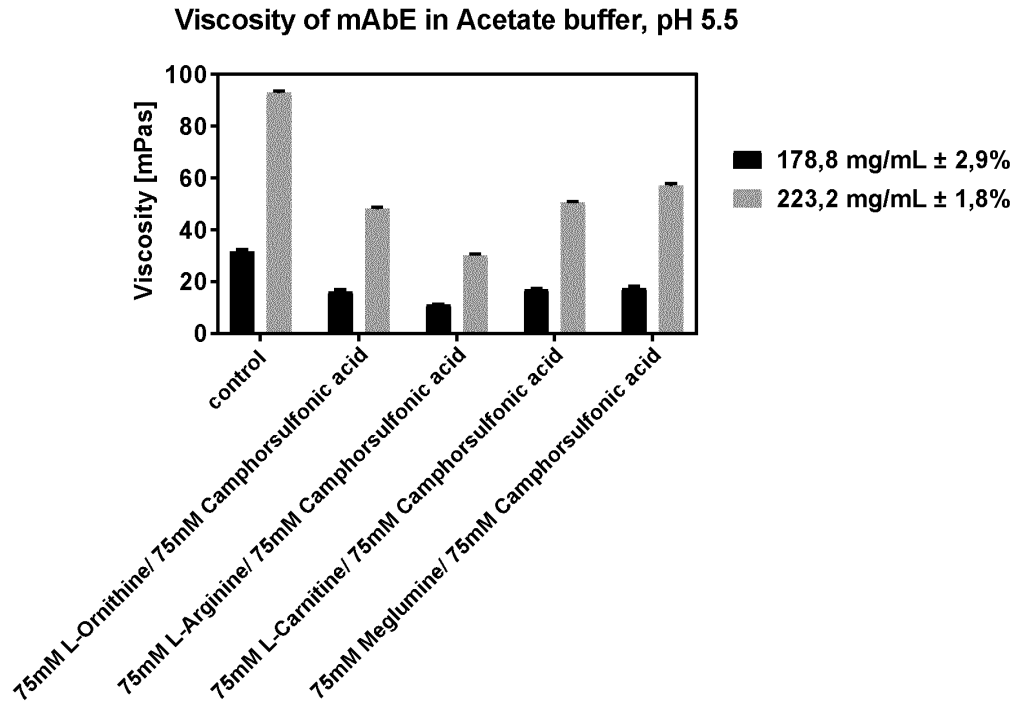

Viscosity of mAbE in Acetate buffer, pH 5.5
Viscosity [mPas]
100
80
60
40
20
0
control
75mM L-Ornithine/ 75mM Camphorsulfonic acid
75mM L-Arginine/ 75mM Camphorsulfonic acid
75mM L-Carnitine/ 75mM Camphorsulfonic acid
75mM Meglumine/ 75mM Camphorsulfonic acid
178,8 mg/mL ± 2,9%
223,2 mg/mL ± 1,8%

Fig 7:

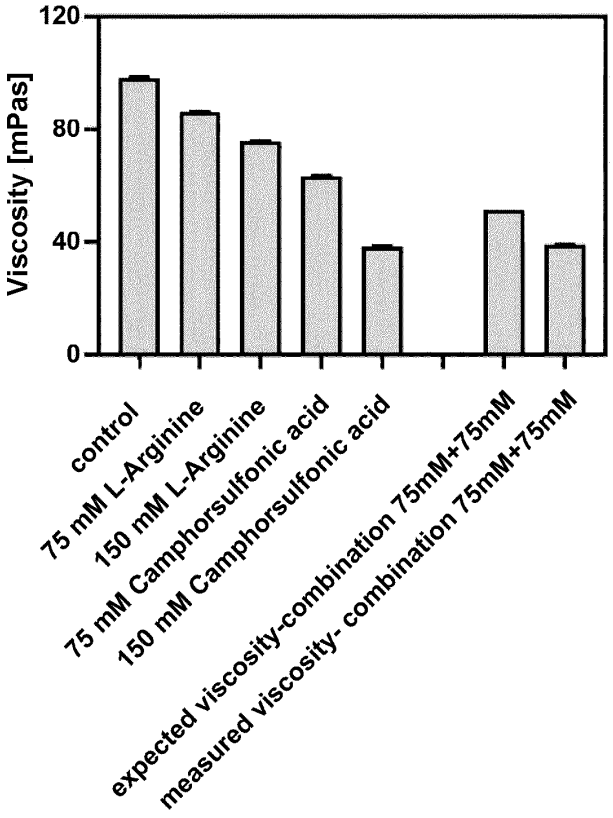

mAbC at pH 7.2 and 148mg/mL ± 3.2%
with addition of L-Arginine or Camphorsulfonic acid
and combination thereof
Viscosity [mPas]
120
80
40
0
control
75 mM L-Arginine
150 mM L-Arginine
75 mM Camphorsulfonic acid
150 mM Camphorsulfonic acid
expected viscosity-combination 75mM+75mM
measured viscosity- combination 75mM+75mM

Fig 8:

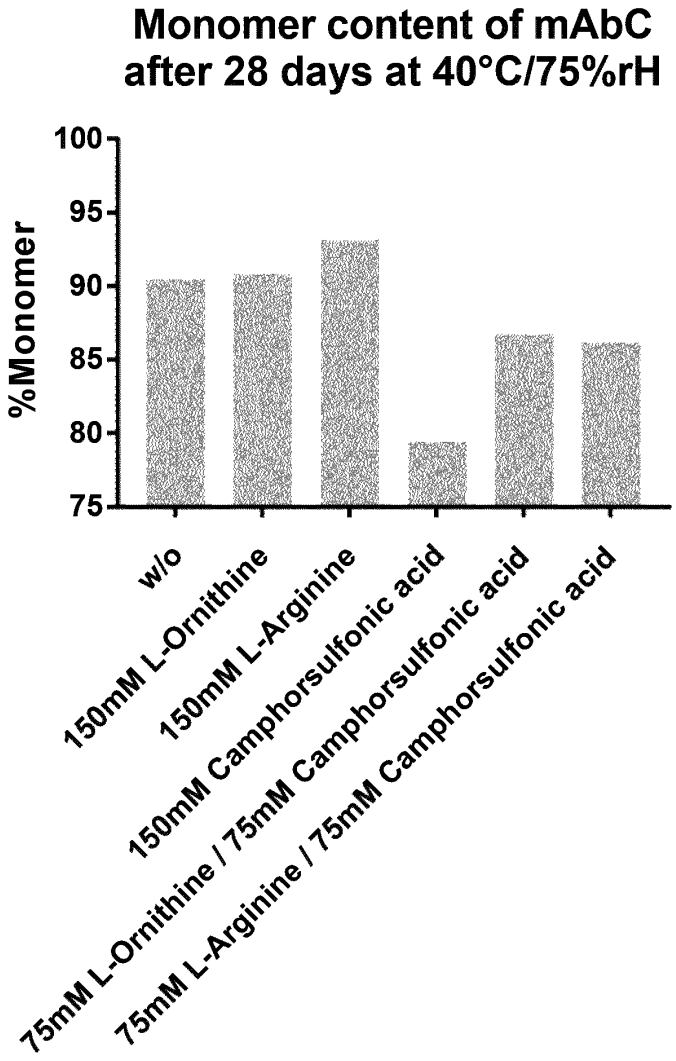

Monomer content of mAbC
after 28 days at 40°C/75%rH
%Monomer
100
95
90
85
80
75
w/o
150mM L-Ornithine
150mM L-Arginine
150mM Camphorsulfonic acid
75mM L-Ornithine / 75mM Camphorsulfonic acid
75mM L-Arginine / 75mM Camphorsulfonic acid

Fig. 9

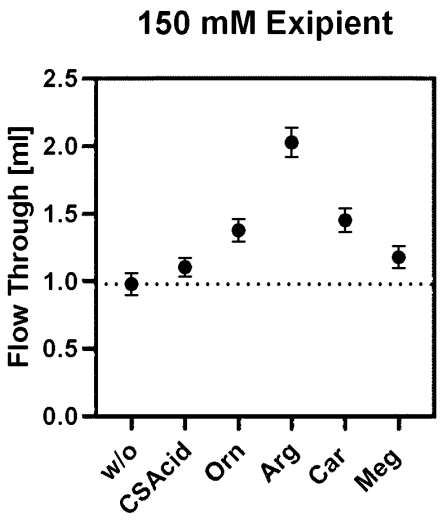

150 mM Exipient
Flow Through [ml]
2.5
2.0
1.5
1.0
0.5
0.0
w/o
CSAcid
Orn
Arg
Car
Meg

Fig. 10

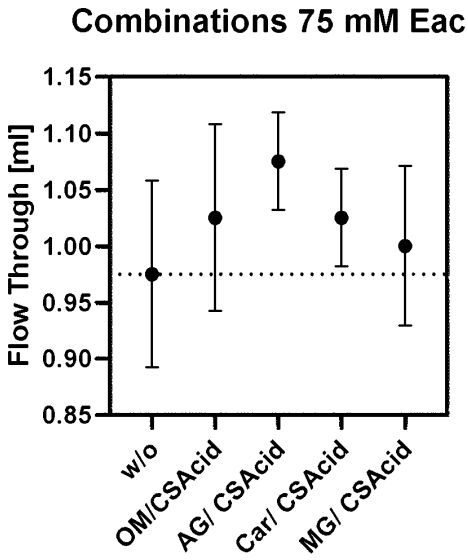

Combinations 75 mM Each
Flow Through [ml]
1.15
1.10
1.05
1.00
0.95
0.90
0.85
w/o
OM/CSAcid
AG/ CSAcid
Car/ CSAcid
MG/ CSAcid

Fig. 11

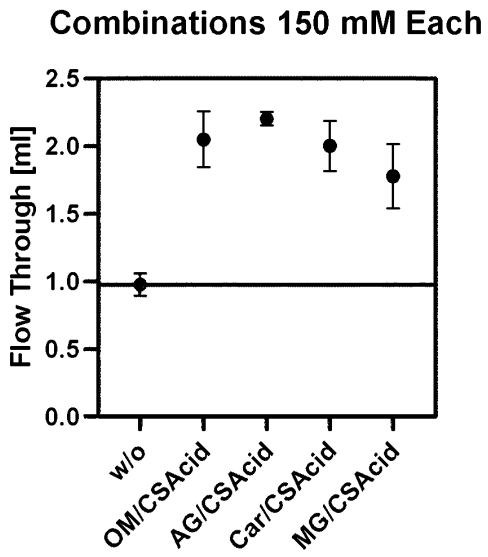

Combinations 150 mM Each
Flow Through [ml]
2.5
2.0
1.5
1.0
0.5
0.0
w/o
OM/CSAcid
AG/CSAcid
Car/CSAcid
MG/CSAcid

Fig. 12

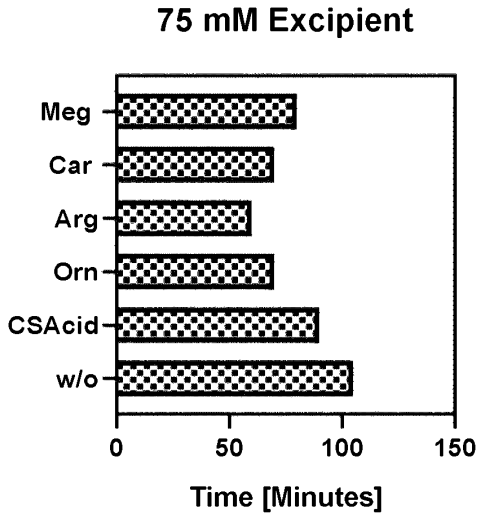

75 mM Excipient
Meg
Car
Arg
Orn
CSAcid
w/o
0
50
100
150
Time [Minutes]

Fig. 13

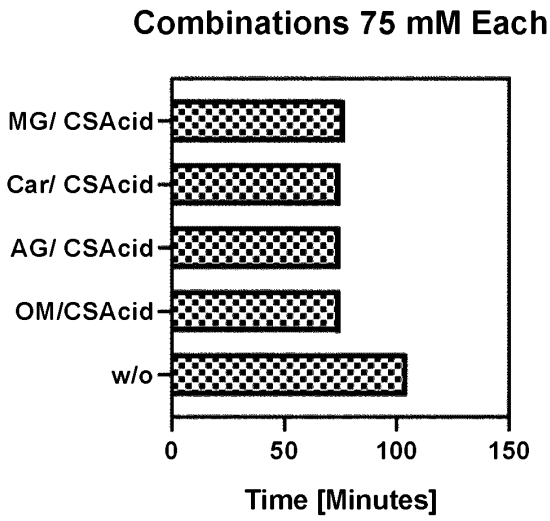

Combinations 75 mM Each
MG/ CSAcid
Car/ CSAcid
AG/ CSAcid
OM/CSAcid
w/o
0
50
100
150
Time [Minutes]

Fig. 14

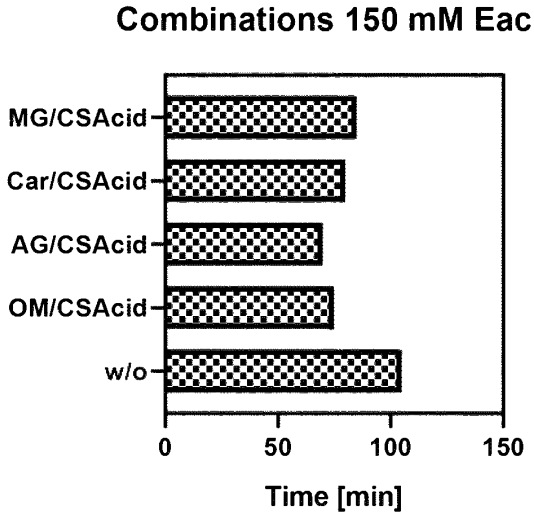

Combinations 150 mM Each
MG/CSAcid
Car/CSAcid
AG/CSAcid
OM/CSAcid
w/o
0
50
100
150
Time [min]

Fig. 15

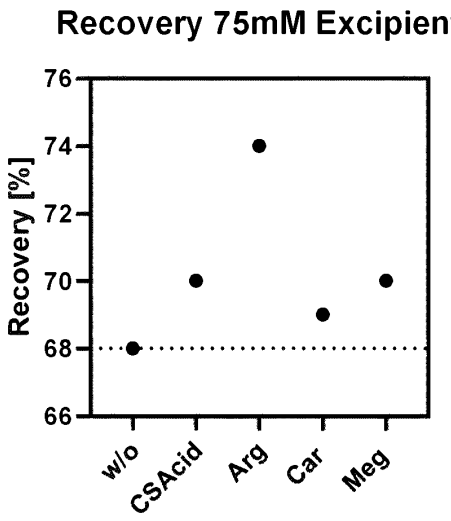

Recovery 75mM Excipient
Recovery [%]
76
74
72
70
68
66
w/o
CSAcid
Arg
Car
Meg

Fig. 16

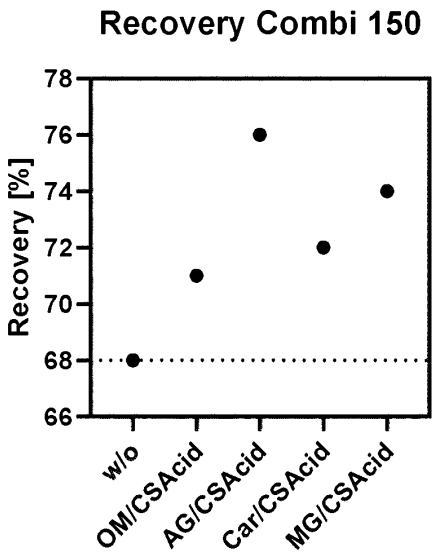

Recovery Combi 150
Recovery [%]
78
76
74
72
70
68
66
w/o
OM/CSAcid
AG/CSAcid
Car/CSAcid
MG/CSAcid

Fig. 17

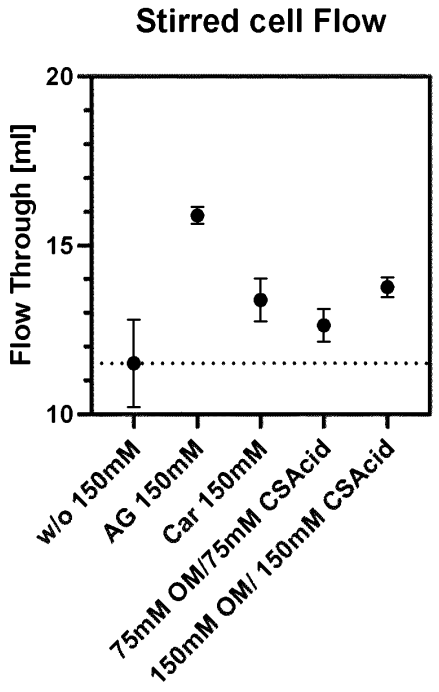

Stirred cell Flow
Flow Through [ml]
20
15
10
w/o 150mM
AG 150mM
Car 150mM
75mM OM/75mM CSAcid
150mM OM/ 150mM CSAcid

Fig. 18

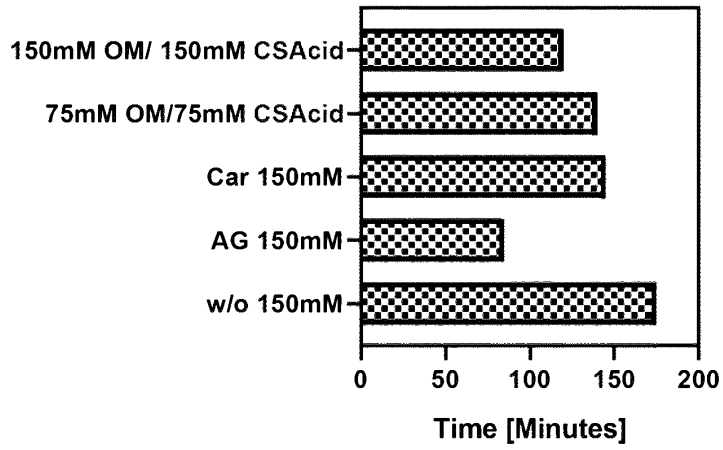

150mM OM/ 150mM CSAcid
75mM OM/75mM CSAcid
Car 150mM
AG 150mM
w/o 150mM
0
50
100
150
200
Time [Minutes]

Fig. 19

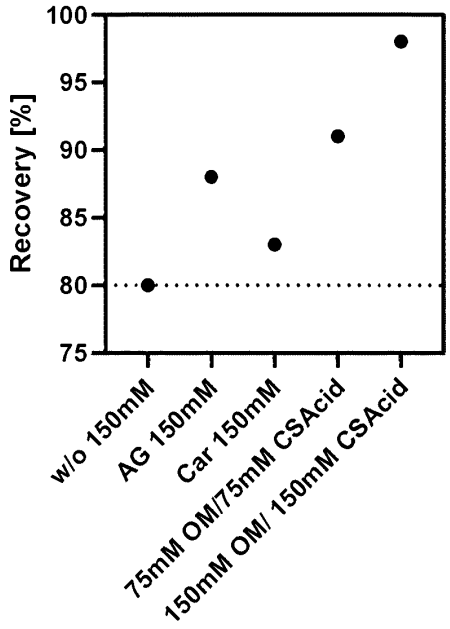

100
95
90
85
80
75
Recovery [%]
w/o 150mM
AG 150mM
Car 150mM
75mM OM/75mM CSAcid
150mM OM/ 150mM CSAcid

Fig. 20

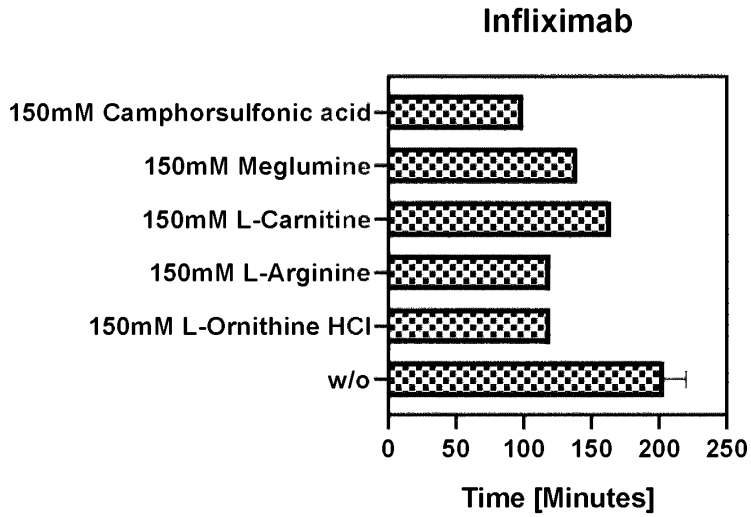
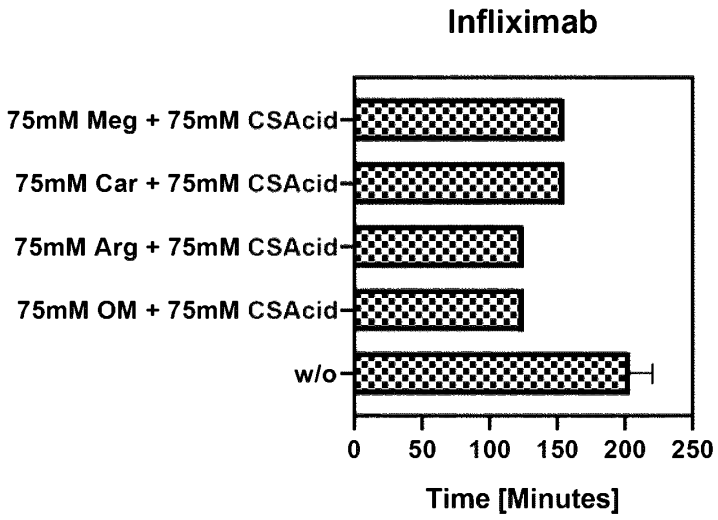

Infliximab
150mM Camphorsulfonic acid
150mM Meglumine
150mM L-Carnitine
150mM L-Arginine
150mM L-Ornithine HCl
w/o
0
50
100
150
200
250
Time [Minutes]

Fig. 21


Infliximab
75mM Meg + 75mM CSAcid
75mM Car + 75mM CSAcid
75mM Arg + 75mM CSAcid
75mM OM + 75mM CSAcid
w/o
0
50
100
150
200
250
Time [Minutes]