Figure 1

A.

	Mesh device	Volume (mL)	VMD (µm)	Mean	SD		Mesh device	Volume (mL)	VMD (µm)	Mean	SD
10A06 IgG 3 mg/ml	S 0087	0.5	5.62	5.52	0.11	**10A06 IgG 10 mg/ml**	S 0087	0.5	5.32	5.07	0.22
	S 0094	0.5	5.54				S 0094	0.5	4.89		
	S 0210	0.5	5.41				S 0210	0.5	5.01		
	ef4732	0.5	5.24	4.50	0.67		ef4732	0.5	3.92	3.96	0.12
	ef4778	0.5	4.34				ef4778	0.5	4.10		
	ef5263	0.5	3.92				ef5263	0.5	3.86		
7B07 IgG 3 mg/ml	S 0087	0.5	5.75	5.60	0.15	**7B07 IgG 10 mg/ml**	S 0087	0.5	5.47	5.31	0.17
	S 0094	0.5	5.45				S 0094	0.5	5.13		
	S 0210	0.5	5.59				S 0210	0.5	5.33		
	ef4732	0.5	4.79	4.66	0.21		ef4732	0.5	4.25	4.50	0.41
	ef4778	0.5	4.42				ef4778	0.5	4.27		
	ef5263	0.5	4.77				ef5263	0.5	4.97		
7B07 Fab 3 mg/ml	S 0087	0.5	5.51	5.41	0.09	**7B07 Fab 10 mg/ml**	S 0087	0.5	5.27	5.23	0.04
	S 0094	0.5	5.39				S 0094	0.5	5.22		
	S 0210	0.5	5.33				S 0210	0.5	5.19		
	ef4732	0.5	4.72	4.45	0.26		ef4732	0.5	4.68	4.66	0.17
	ef4778	0.5	4.42				ef4778	0.5	4.47		
	ef5263	0.5	4.21				ef5263	0.5	4.82		
1D06 VHH 3 mg/ml	S 0087	0.5	5.29	5.22	0.06	**1D06 VHH 10 mg/ml**	S 0087	0.25	5.43	5.27	0.20
	S 0094	0.5	5.22				S 0094	0.25	5.32		
	S 0210	0.5	5.16				S 0210	0.25	5.05		
	ef4732	0.5	4.13	4.20	0.19		ef4732	0.25	4.10	4.63	0.52
	ef4778	0.5	4.42				ef4778	0.25	4.67		
	ef5263	0.5	4.05				ef5263	0.115	5.13		
08H11 IgG 3 mg/ml	S 0087	0.5	5.62	5.44	0.17	**08H11 IgG 10 mg/ml**	S 0087	0.5	5.43	5.33	0.10
	S 0094	0.5	5.30				S 0094	0.5	5.33		
	S 0210	0.5	5.39				S 0210	0.5	5.23		
	ef4732	0.5	4.43	4.46	0.03		ef4732	0.5	4.63	4.91	0.31
	ef4778	0.5	4.47				ef4778	0.5	5.24		
	ef5263	0.5	4.49				ef5263	0.5	4.86		

Figure 1 continued

B.

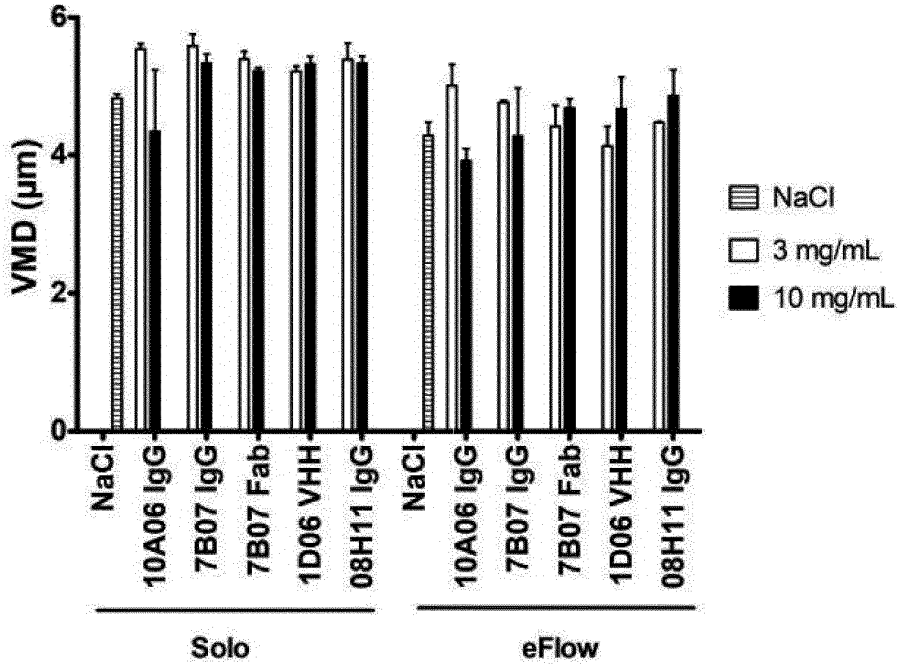


Figure 2

A.

Sample Concentration	State	Concentration (nanodrop)				
		Assay #				
		S0087 or ef4732	S0094 or ef4778	S0210 or ef5263	Mean	SD
10A06 IgG 3 mg/ml	**Before neb.**	2.800			**2.800**	
	Solo	2.627	2.663	2.852	**2.714**	**0.121**
	eFlow	2.887	2.714	2.725	**2.775**	**0.097**
7B07 IgG 3 mg/ml	**Before neb.**	2.862			**2.862**	
	Solo	2.719	2.888	2.653	**2.753**	**0.121**
	eFlow	2.829	2.876	2.780	**2.828**	**0.048**
7B07 Fab 3 mg/ml	**Before neb.**	3.018			**3.018**	
	Solo	2.789	2.773	2.637	**2.733**	**0.083**
	eFlow	2.957	2.861	2.897	**2.905**	**0.049**
1D06 VHH 3 mg/ml	**Before neb.**	3.054			**3.054**	
	Solo	3.304	2.694	2.791	**2.930**	**0.328**
	eFlow	3.421	3.292	3.190	**3.301**	**0.115**
08H11 IgG 3 mg/ml	**Before neb.**	3.063			**3.063**	
	Solo	2.941	2.942	2.908	**2.931**	**0.020**
	eFlow	3.051	3.033	2.949	**3.011**	**0.054**
10A06 IgG 10 mg/ml	**Before neb.**	10.187			**10.187**	
	Solo	10.720	10.340	10.340	**10.467**	**0.219**
	eFlow	10.070	10.170	10.190	**10.143**	**0.064**
7B07 IgG 10 mg/ml	**Before neb.**	10.543			**10.543**	
	Solo	9.676	10.290	9.841	**9.936**	**0.318**
	eFlow	10.580	10.540	10.300	**10.473**	**0.151**
7B07 Fab 10 mg/ml	**Before neb.**	9.200			**9.200**	
	Solo	8.630	8.920	8.610	**8.720**	**0.173**
	eFlow	10.170	9.040	10.010	**9.740**	**0.611**
1D06 VHH 10 mg/ml	**Before neb.**	10.063			**10.063**	
	Solo	8.799	8.856	8.851	**8.835**	**0.032**
	eFlow	9.981	9.787	9.095	**9.621**	**0.466**
08H11 IgG 10 mg/ml	**Before neb.**	8.870			**8.870**	
	Solo	8.600	8.620	8.700	**8.640**	**0.053**
	eFlow	8.840	8.730	8.400	**8.657**	**0.229**

Figure 2 continued

B.

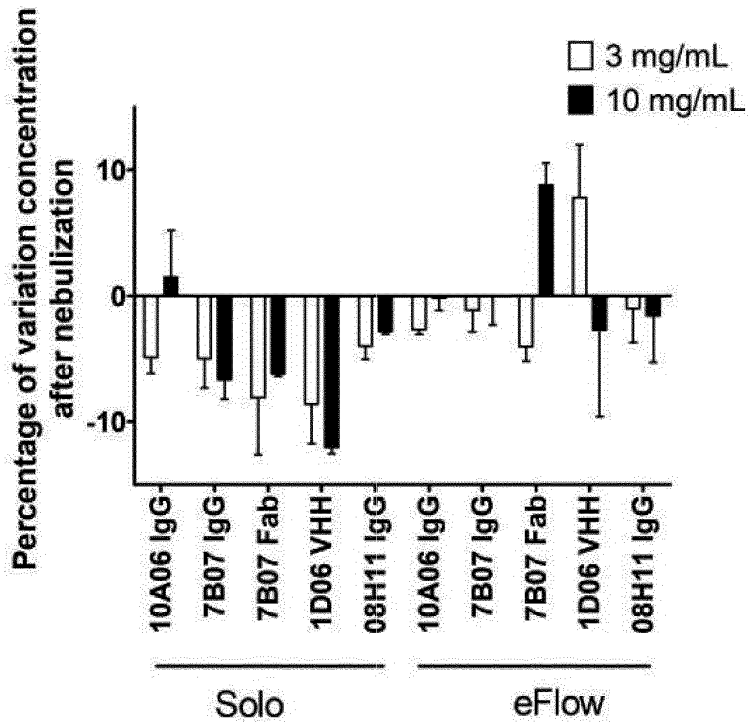


Figure 3

A.

Sample Concentration	Nebulization	Number of particles total Mean	SD	Number of particles > 2µm/mL Mean	SD	Number of particles > 10µm/mL Mean	SD	Number of particles > 25µm/mL Mean	SD
10A06 IgG 3 mg/ml	Before neb.	0		0		0		0	
	Solo	383207	10850	104381	34386	33224	27065	5177	278
	eFlow	321870	110833	97476	10327	9632	5527	1017	621
10A06 IgG 10 mg/ml	Before neb.	0		0		0		0	
	Solo	2753693	1919302	753400	184905	114307	27472	16312	6049
	eFlow	3183233	1043899	1267978	319144	186634	29849	20127	7216
7B07 IgG 3 mg/ml	Before neb.	0		35		0		0	
	Solo	150120	90212	78105	47815	27169	15741	7010	3809
	eFlow	465469	366817	201900	195015	60896	64539	19567	20946
7B07 IgG 10 mg/ml	Before neb.	2821		245		1		0	
	Solo	400079	224236	187094	107200	44614	27596	8523	5882
	eFlow	1643272	329390	803316	158601	218911	29194	53004	12758
7B07 Fab 3 mg/ml	Before neb.	9		0		41		10	
	Solo	6427	6089	2349	2242	196	205	9	20
	eFlow	10342	11575	3183	5800	605	742	36	49
7B07 Fab 10 mg/ml	Before neb.	0		259		19		0	
	Solo	12667	9385	6040	4768	797	693	8	19
	eFlow	52558	40718	20353	15539	1925	1468	53	20
1D06 VHH 3 mg/ml	Before neb.	325		456		105		26	
	Solo	7048602	1783407	3633281	831006	1049703	165525	113673	39937
	eFlow	8537314	996423	4378338	642301	1255850	277770	182314	26847
1D06 VHH 10 mg/ml	Before neb.	2162		673		2		0	
	Solo	4737225	805312	2149534	459367	506185	130560	125365	27988
	eFlow	4317241	569197	1874236	222907	444181	69657	111474	9893
08H11 IgG 3 mg/ml	Before neb.	0		0		0		0	
	Solo	3753	4010	1160	1076	112	36	3	12
	eFlow	4136	4351	1737	1964	463	564	5	55
08H11 IgG 10 mg/ml	Before neb.	0		0		0		0	
	Solo	20666	6283	9744	3348	1436	535	62	35
	eFlow	1978	5507	776	2813	82	229	14	19

Figure 3 continued

B.

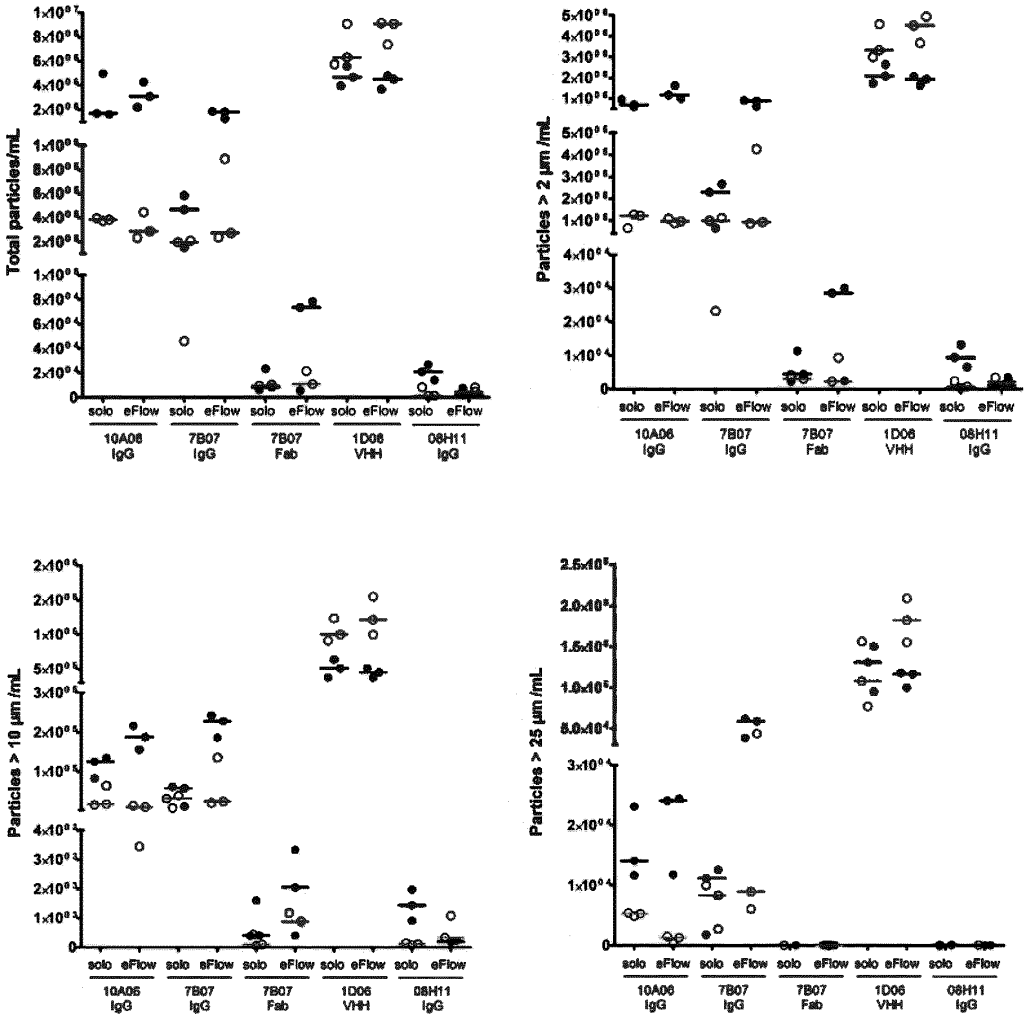


Figure 4

Sample Format Concentration	State	Analysed directly after neb. Rayon (nm)	mass (%)	polydispersion (%)	PDI	Number of analysable samples	[3]Analysed after filtration on 0.45 µm Rayon (nm)	mass (%)	polydispersion (%)	PDI	Number of analysable samples	Number of analysable samples
10A06	Before neb.	5.58	100.00%	15.90%	0.37		-					
IgG	Solo	Multimodal				0/3	4.97	99.90%	14.03%	0.21	3/3	3/3
3 mg/ml	eFlow	Multimodal				0/3	5.05	99.90%	10.80%	0.18	1/3	1/3
10A06	Before neb.	5.15	100%	19.40%	0.05		-					
IgG	Solo	Multimodal				0/3	Multimodal				0/3	0/3
10 mg/ml	eFlow	Multimodal				0/3	Multimodal				0/3	0/3
7B07	Before neb.	5.43	100.00%	11.90%	0.05		-					
IgG	Solo	Multimodal				0/3	5.82	99.80%	11.20%	0.20	1/3	1/3
3 mg/ml	eFlow	Multimodal				0/3	5.82	99.80%	11.20%	0.20	1/3	1/3
7B07	Before neb.	7.02	100.00%	19.40%	0.09		-					
IgG	Solo	Multimodal				0/3	5.90	99.60%	17.10%	0.25	2/3	2/3
10 mg/ml	eFlow	Multimodal				0/3	Multimodal				0/3	0/3
7B07	Before neb.	2.95	100.00%	20.20%	0.05		-					
Fab	Solo	3.33	100.00%	11.10%	0.19	2/3	3.12	100.00%	14.20%	0.22	1/1	3/3
3 mg/ml	eFlow	3.27	100.00%	11.50%	0.18	1/3	3.29	100.00%	11.70%	0.24	1/2	2/3
7B07	Before neb.	3.62	100.00%	9.90%	0.03		-					
Fab	Solo	3.34	100.00%	11.43%	0.21	3/3	Samples analysed without filtration				-	3/3
10 mg/ml	eFlow	Multimodal				0/3	3.74	100.00%	14.05%	0.22	2/3	2/3
1D06	Before neb.	1.98	100.00%	10.00%	0.17		-					
VHH	Solo	Multimodal				0/3	Multimodal				0/3	0/3
3 mg/ml	eFlow	Multimodal				0/3	1.59	100.00%	27.00%	0.20	2/3	2/3
1D06	Before neb.	2.00	100.00%	9.40%	0.92		-					
VHH	Solo	Multimodal				0/3	Multimodal				0/3	0/3
10 mg/ml	eFlow	Multimodal				0/3	1.90	100.00%	9.20%	1.02	1/3	1/3
08H11	Before neb.	5.48	100.00%	21.30%	0.06		-					
IgG	Solo	6.01	99.90%	19.20%	0.24	1/3	5.16	99.80%	16.80%	0.24	2/2	3/3
3 mg/ml	eFlow	5.51	99.80%	23.50%	0.30	1/3	Multimodal				0/2	1/3
08H11	Before neb.	5.87	99.60%	16.90%	0.09		-					
IgG	Solo	6.70	92.23%	16.13%	0.22	3/3	Samples analysed without filtration				-	3/3
10 mg/ml	eFlow	6.40	99.85%	20.30%	0.25	2/3	Multimodal				0/1	2/3

Figure 5

A.

Sample Concentration	State	% Monomer				%HMW			
		3 mg/ml		10 mg/ml		3 mg/ml		10 mg/ml	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
10A06 IgG 3 mg/ml	Before neb.	97.600		99.160		2.403		0.838	
	Solo	96.490	0.130	98.477	0.060	3.509	0.127	1.526	0.061
	eFlow	96.373	0.200	98.417	0.145	3.624	0.197	1.584	0.141
7B07 IgG 3 mg/ml	Before neb.	93.970		94.890		6.027		5.109	
	Solo	90.380	0.061	93.490	0.747	9.621	0.063	6.514	0.748
	eFlow	90.897	1.383	93.683	0.781	9.104	1.386	6.316	0.782
7B07 Fab 3 mg/ml	Before neb.	98.680		98,890		1.325		1.106	
	Solo	96.183	0.197	98,383	0.145	3.815	0.198	1.616	0.145
	eFlow	96.150	1.169	98,143	0.136	3.851	1.168	1.854	0.135
1D06 VHH 3 mg/ml	Before neb.	100.000		99,650		0.000		0.350	
	Solo	98.630	0.085	99,203	0.047	1.369	0.086	0.796	0.049
	eFlow	99.267	0.055	99,393	0.031	0.730	0.056	0.604	0.028
08H11 IgG 3 mg/ml	Before neb.	99.190		99.630		0.806		0.368	
	Solo	97.323	0.241	98.430	0.046	2.679	0.240	1.571	0.043
	eFlow	96.980	0.137	98.133	0.144	3.022	0.137	1.868	0.143

B.

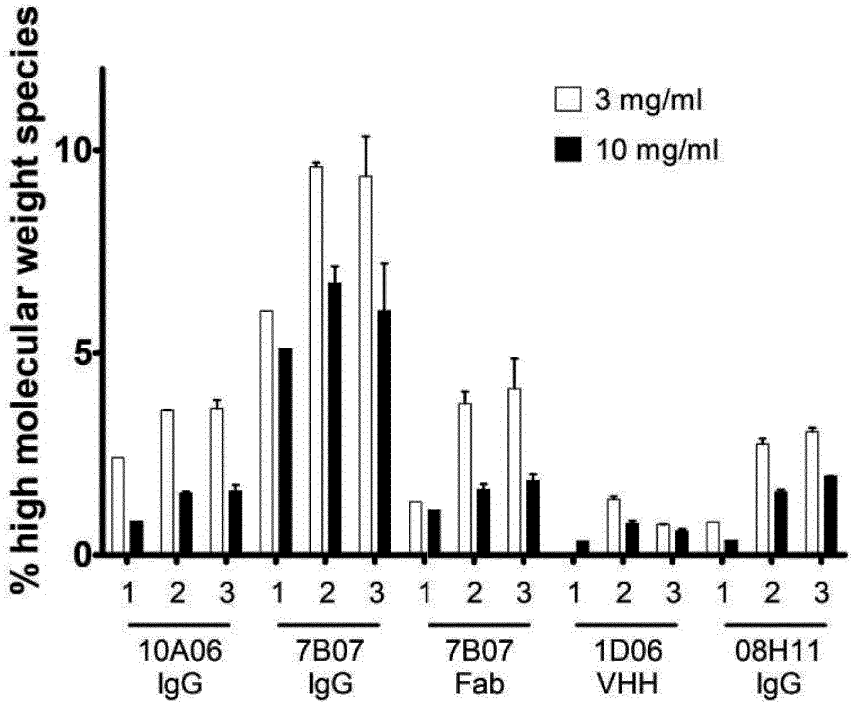
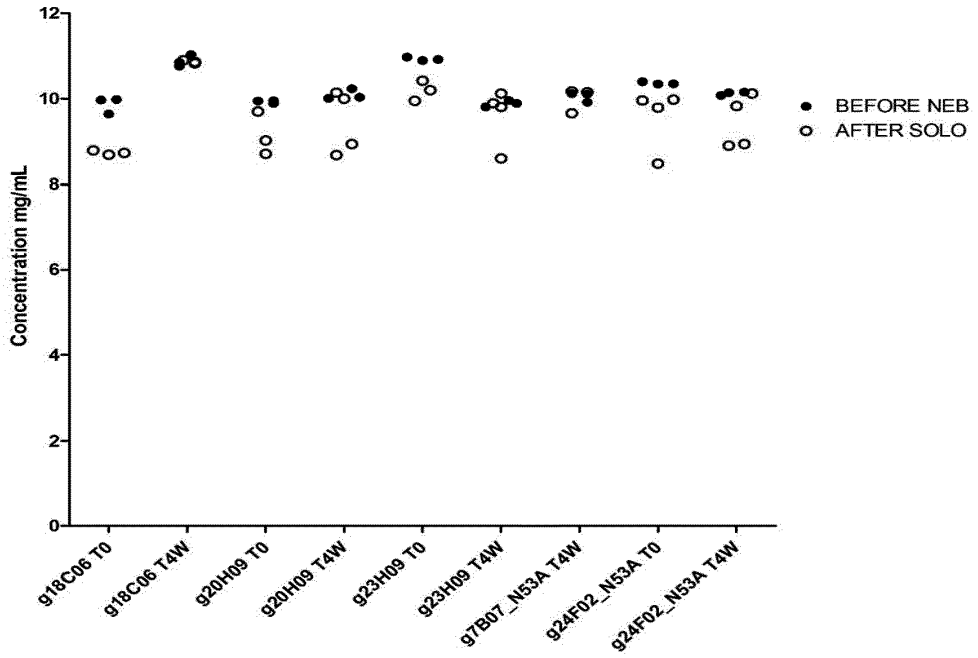


Figure 6

A.


Concentration mg/mL
12
10
8
6
4
2
0
BEFORE NEB
AFTER SOLO
g18C06 T0
g18C06 T4W
g20H09 T0
g20H09 T4W
g23H09 T0
g23H09 T4W
g7B07_N53A T4W
g24F02_N53A T0
g24F02_N53A T4W

B.

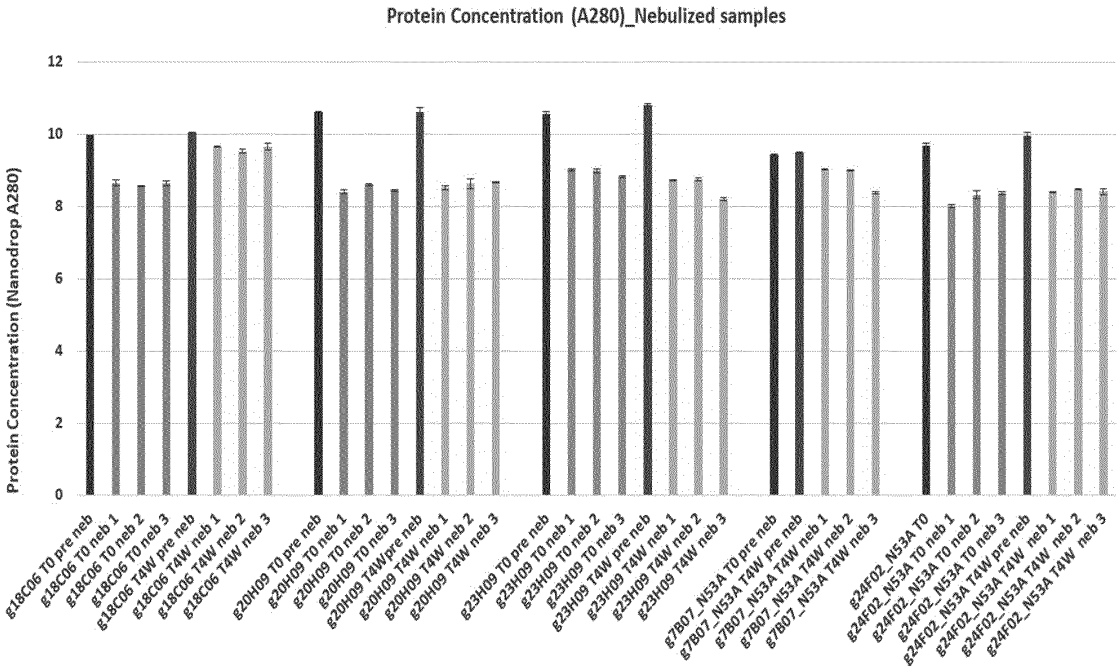

Protein Concentration (A280)_Nebulized samples
Protein Concentration (Nanodrop A280)
12
10
8
6
4
2
0
g18C06 T0 pre neb
g18C06 T0 neb 1
g18C06 T0 neb 2
g18C06 T0 neb 3
g18C06 T4W pre neb
g18C06 T4W neb 1
g18C06 T4W neb 2
g18C06 T4W neb 3
g20H09 T0 pre neb
g20H09 T0 neb 1
g20H09 T0 neb 2
g20H09 T0 neb 3
g20H09 T4Wpre neb
g20H09 T4W neb 1
g20H09 T4W neb 2
g20H09 T4W neb 3
g23H09 T0 pre neb
g23H09 T0 neb 1
g23H09 T0 neb 2
g23H09 T0 neb 3
g23H09 T4W pre neb
g23H09 T4W neb 1
g23H09 T4W neb 2
g23H09 T4W neb 3
g7B07_N53A T0 pre neb
g7B07_N53A T4W pre neb
g7B07_N53A T4W neb 1
g7B07_N53A T4W neb 2
g7B07_N53A T4W neb 3
g24F02_N53A T0
g24F02_N53A T0 neb 1
g24F02_N53A T0 neb 2
g24F02_N53A T0 neb 3
g24F02_N53A T4W pre neb
g24F02_N53A T4W neb 1
g24F02_N53A T4W neb 2
g24F02_N53A T4W neb 3

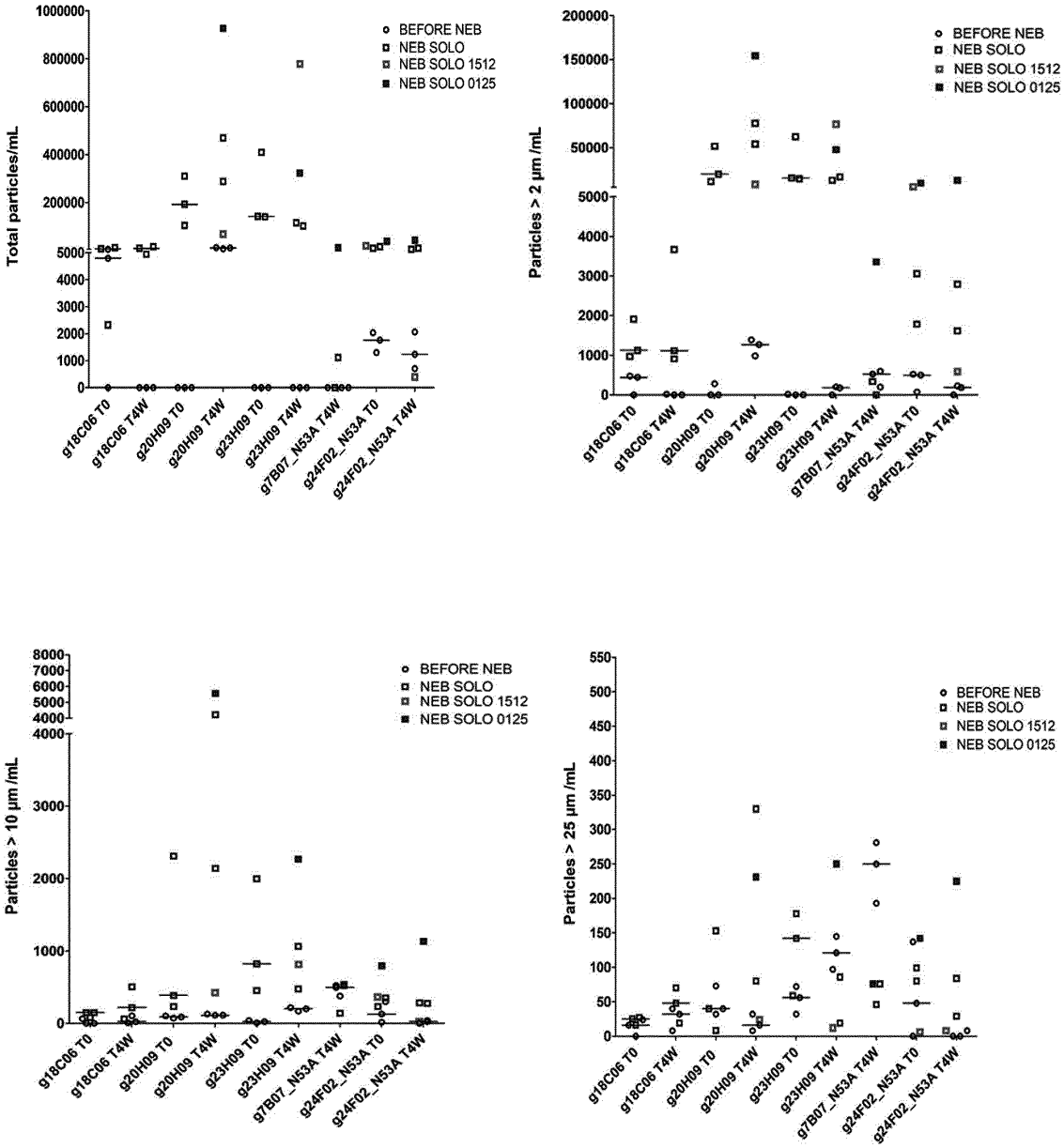
Figure 7

Sample	Solo	Radius (nm)	Range of Radius (nm)	Mass (%)	Range of mass (%)	Pd (%)	Range of Pd (%)	PDI	Range of PDI	Number multimodal sample	Number of not exploitable sample
g18C06 T0	Before	3.3	3.2 - 3.5	100	100	11.8	11.0 - 12.7	0.12	0.11 - 0.13	1/3	0/3
	1690	3.3	3.1 - 3.6	100	100	9.4	6.4 - 11.1	0.09	0.06 - 0.11	1/3	0/3
	0125	3.4	3.2 - 3.7	99.9	99.7 - 100	8.0	7.0 - 9.2	0.08	0.07 - 0.09	1/3	0/3
	0259	3.2	2.6 - 3.7	100	100	9.1	8.2 - 10.0	0.09	0.08 - 0.10	1/3	0/3
g18C06 T4W	Before	3.3	3.2 - 3.4	100	100	13.4	8.7 - 20.4	0.13	0.09 - 0.20	0/3	0/3
	1690	3.4	3.3 - 3.4	99.9	99.8 - 100	11.0	10.5 - 11.8	0.11	0.10 - 0.12	1/3	1/3
	0125	3.3	3.1 - 3.8	99.9	99.7 - 100	5.9	5.0 - 7.6	0.06	0.05 - 0.08	1/3	0/3
	0259	3.4	3.2 - 3.5	100	99.9 - 100	11.5	9.1 - 13.7	0.12	0.09 - 0.14	3/3	0/3
g20H09 T0	Before	3.7	3.6 - 3.9	99.9	99.9 - 100	13.2	11.3 - 14.6	0.13	0.11 - 0.15	3/3	0/3
	1690	NOT EXPLOITABLE									
	0125										
	0259										
g20H09 T4W	Before	3.6	3.6 - 3.7	100	100	12.5	11.6 - 14.3	0.13	0.12 - 0.14	3/3	0/3
	1690	NOT EXPLOITABLE									
	0125										
	0259										
	1512										
g23H09 T0	Before	3.5	3.4 - 3.7	100	100	11.3	10.4 - 11.9	0.11	0.1 - 0.12	3/3	0/3
	1690	NOT EXPLOITABLE									
	0125										
	0259										
g23H09 T4W	Before	3.5	3.3 - 3.6	99.9	99.8 - 100	16.0	11.4 - 18.4	0.16	0.11 - 0.18	1/3	0/3
	1690	NOT EXPLOITABLE									
	0125										
	0259										
	1512										

Figure 7 continued

g7B07_ N53A T4W	Before	3.4	3.3 - 3.5	100	100	11.9	11.8 - 12	0.12	0.12	0/3	0/3
	1690	3.3	3.2 - 3.3	100	100	11.0	10.2 - 12.3	0.11	0.10 - 0.12	2/3	0/3
	0125	3.4	3.3 - 3.4	100	100	11.2	11.3 - 12.4	0.12	0.11 - 0.12	3/3	0/3
	0259	3.4	3.3 - 3.6	100	100	15.6	10.6 - 25.6	0.16	0.11 - 0.26	1/3	0/3
g24F02_ N53A T0	Before	3.5	3.4 - 3.5	100	100	12.2	11.9 - 12.7	0.12	0.12 - 0.13	0/3	0/3
	1690	3.5	3.4 - 3.6	100	100	11.5	10.9 - 11.9	0.12	0.11 - 0.12	0/3	0/3
	0125	3.4	3.4	100	100	12.1	11.8 - 12.6	0.12	0.12 - 0.13	2/3	0/3
	0259	3.5	3.5 - 3.6	99.9	99.8 - 100	11.8	11.5 - 12.0	0.12	0.11 - 0.12	3/3	0/3
	1512	3.5	3.4 - 3.7	100	100	11.4	10.7 - 12.0	0.12	0.11 - 0.12	3/3	0/3
g24F02_ N53A T4W	Before	3.5	3.5	100	100	16.4	11.9 - 20.0	0.16	0.12 - 0.20	0/3	0/3
	1690	3.4	3.4 - 3.5	99.9	99.8 - 100	11.8	11.7 - 11.9	0.12	0.12	2/3	0/3
	0125	3.4	3.4 - 3.5	100	99.9 - 100	14.2	11.7 - 18.6	0.14	0.12 - 0.19	3/3	0/3
	0259	3.5	3.4 - 3.5	100	100	13.0	12.0 - 14.5	0.13	0.12 - 0.14	1/3	0/3
	1512	3.4	3.4 - 3.5	99.9	99.8 - 100	11.9	11.8 - 11.9	0.12	0.12	2/3	0/3

Figure 8


Total particles/mL
1000000
800000
600000
400000
200000
5000
4000
3000
2000
1000
0
BEFORE NEB
NEB SOLO
NEB SOLO 1512
NEB SOLO 0125
g18C06 T0
g18C06 T4W
g20H09 T0
g20H09 T4W
g23H09 T0
g23H09 T4W
g7B07_N53A T4W
g24F02_N53A T0
g24F02_N53A T4W
Particles > 2 µm /mL
200000
150000
100000
50000
5000
4000
3000
2000
1000
0
Particles > 10 µm /mL
8000
7000
6000
5000
4000
4000
3000
2000
1000
0
Particles > 25 µm /mL
550
500
450
400
350
300
250
200
150
100
50
0

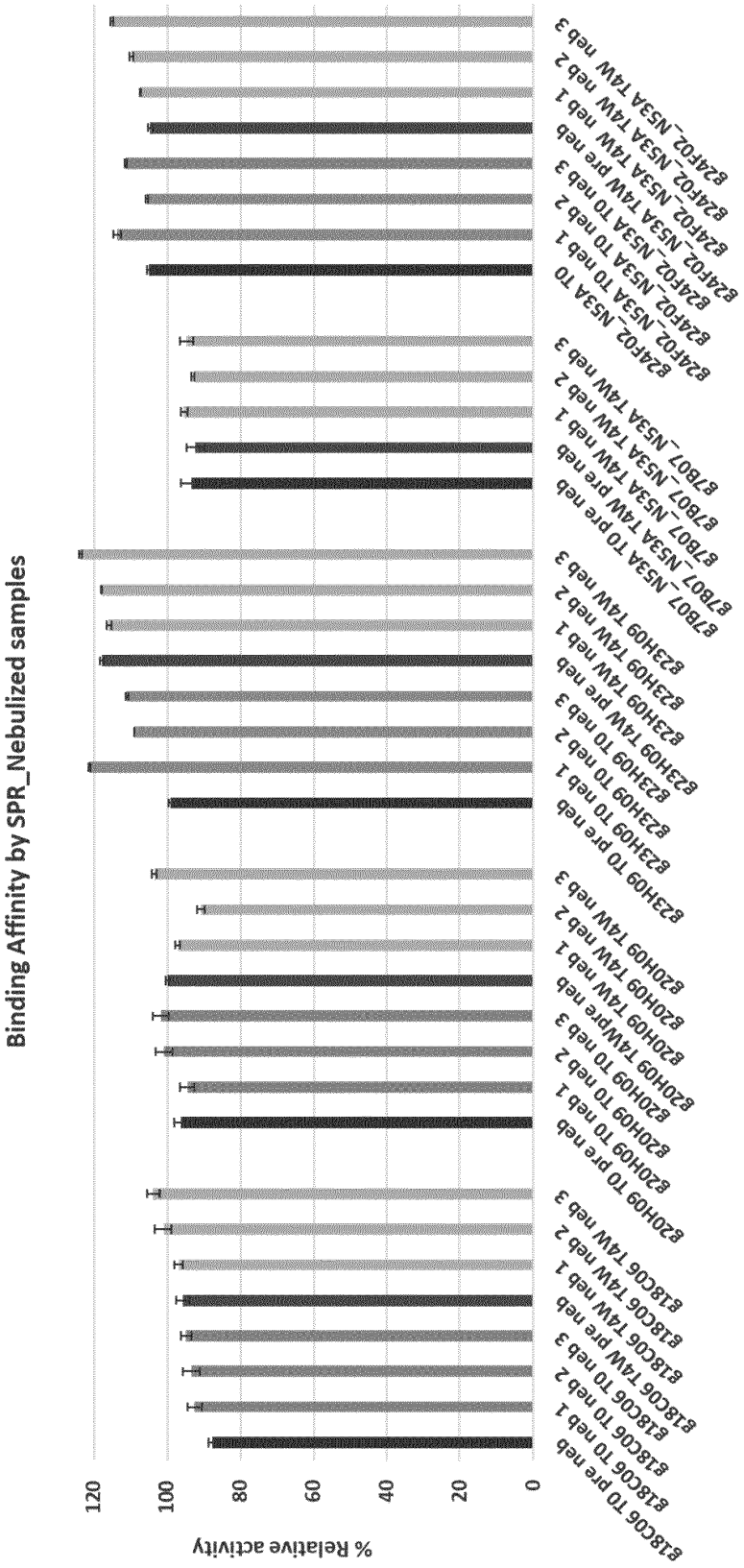

Binding Affinity by SPR_Nebulized samples
% Relative activity
120
100
80
60
40
20
0
E18C06 T0 pre neb
E18C06 T0 neb 1
E18C06 T0 neb 2
E18C06 T0 neb 3
E18C06 T4W pre neb
E18C06 T4W neb 1
E18C06 T4W neb 2
E18C06 T4W neb 3
E20H09 T0 pre neb
E20H09 T0 neb 1
E20H09 T0 neb 2
E20H09 T0 neb 3
E20H09 T4Wpre neb
E20H09 T4W neb 1
E20H09 T4W neb 2
E20H09 T4W neb 3
E23H09 T0 pre neb
E23H09 T0 neb 1
E23H09 T0 neb 2
E23H09 T0 neb 3
E23H09 T4W pre neb
E23H09 T4W neb 1
E23H09 T4W neb 2
E23H09 T4W neb 3
E78O7_N53A T0 pre neb
E78O7_N53A T0 neb 1
E78O7_N53A T0 neb 2
E78O7_N53A T0 neb 3
E78O7_N53A T4W pre neb
E78O7_N53A T4W neb 1
E78O7_N53A T4W neb 2
E78O7_N53A T4W neb 3
E24F02_N53A T0 pre neb
E24F02_N53A T0 neb 1
E24F02_N53A T0 neb 2
E24F02_N53A T0 neb 3
E24F02_N53A T4W pre neb
E24F02_N53A T4W neb 1
E24F02_N53A T4W neb 2
E24F02_N53A T4W neb 3

Figure 9

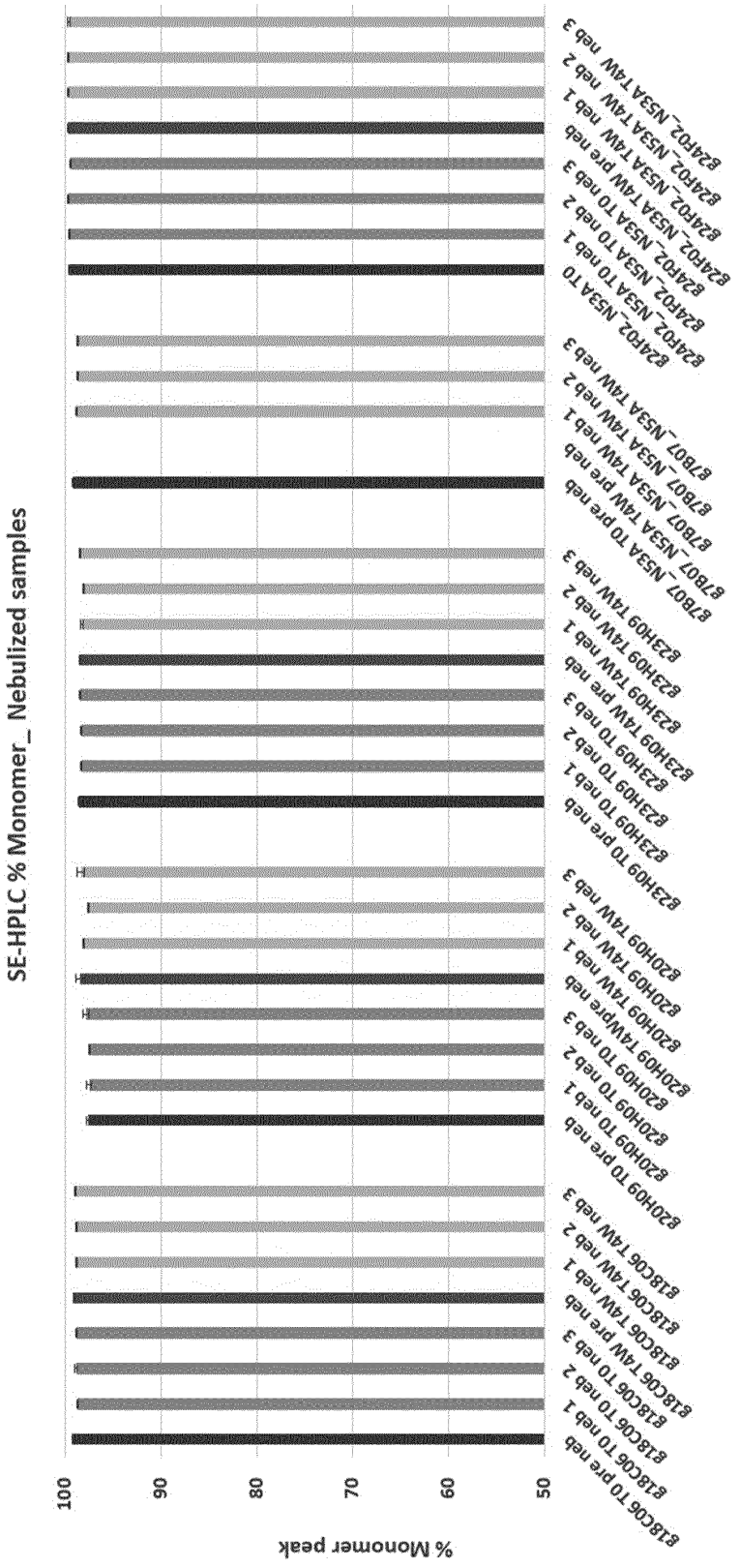
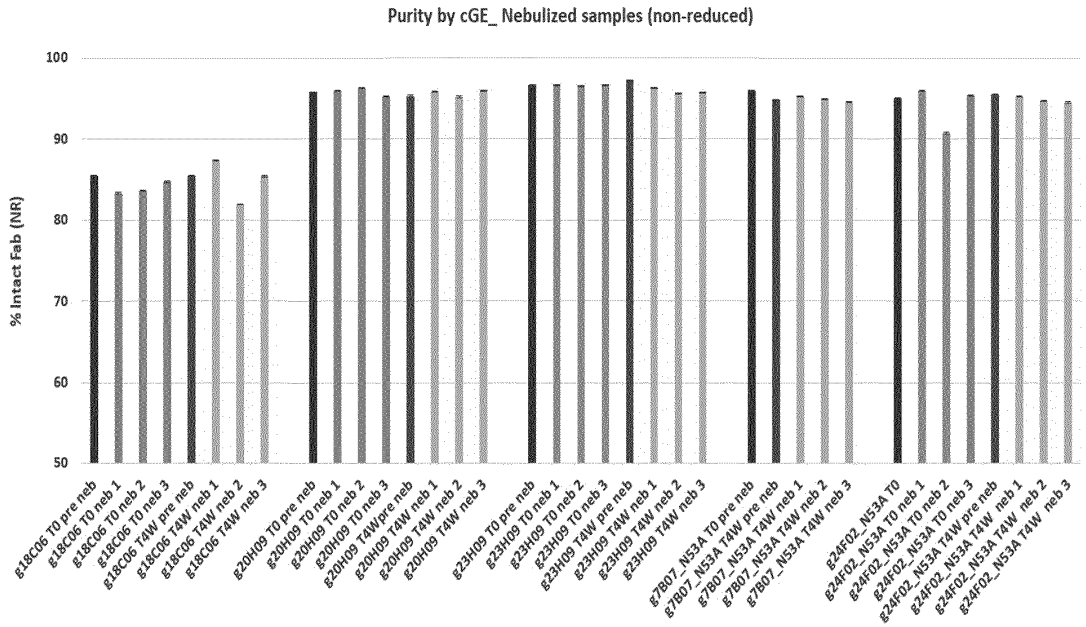

SE-HPLC % Monomer_ Nebulized samples
% Monomer peak
100
90
80
70
60
50
E18C06 T0 pre neb
E18C06 T0 neb 1
E18C06 T0 neb 2
E18C06 T0 neb 3
E18C06 T4W pre neb
E18C06 T4W neb 1
E18C06 T4W neb 2
E18C06 T4W neb 3
E20H09 T0 pre neb
E20H09 T0 neb 1
E20H09 T0 neb 2
E20H09 T0 neb 3
E20H09 T4Wpre neb
E20H09 T4W neb 1
E20H09 T4W neb 2
E20H09 T4W neb 3
E23H09 T0 pre neb
E23H09 T0 neb 1
E23H09 T0 neb 2
E23H09 T0 neb 3
E23H09 T4W pre neb
E23H09 T4W neb 1
E23H09 T4W neb 2
E23H09 T4W neb 3
E78O7_NS4A T0 pre neb
E78O7_NS4A T0 neb 1
E78O7_NS4A T0 neb 2
E78O7_NS4A T0 neb 3
E78O7_NS4A T4W pre neb
E78O7_NS4A T4W neb 1
E78O7_NS4A T4W neb 2
E78O7_NS4A T4W neb 3
E24F02_NS4A T0 pre neb
E24F02_NS4A T0 neb 1
E24F02_NS4A T0 neb 2
E24F02_NS4A T0 neb 3
E24F02_NS4A T4W pre neb
E24F02_NS4A T4W neb 1
E24F02_NS4A T4W neb 2
E24F02_NS4A T4W neb 3

Figure 10

Figure 11

A.


Purity by cGE_ Nebulized samples (non-reduced)
% Intact Fab (NR)
100
90
80
70
60
50
g18C06 T0 pre neb
g18C06 T0 neb 1
g18C06 T0 neb 2
g18C06 T0 neb 3
g18C06 T4W pre neb
g18C06 T4W neb 1
g18C06 T4W neb 2
g18C06 T4W neb 3
g20H09 T0 pre neb
g20H09 T0 neb 1
g20H09 T0 neb 2
g20H09 T0 neb 3
g20H09 T4Wpre neb
g20H09 T4W neb 1
g20H09 T4W neb 2
g20H09 T4W neb 3
g23H09 T0 pre neb
g23H09 T0 neb 1
g23H09 T0 neb 2
g23H09 T0 neb 3
g23H09 T4W pre neb
g23H09 T4W neb 1
g23H09 T4W neb 2
g23H09 T4W neb 3
g7B07_N53A T0 pre neb
g7B07_N53A T4W pre neb
g7B07_N53A T4W neb 1
g7B07_N53A T4W neb 2
g7B07_N53A T4W neb 3
g24F02_N53A T0
g24F02_N53A T0 neb 1
g24F02_N53A T0 neb 2
g24F02_N53A T0 neb 3
g24F02_N53A T4W pre neb
g24F02_N53A T4W neb 1
g24F02_N53A T4W neb 2
g24F02_N53A T4W neb 3

B.

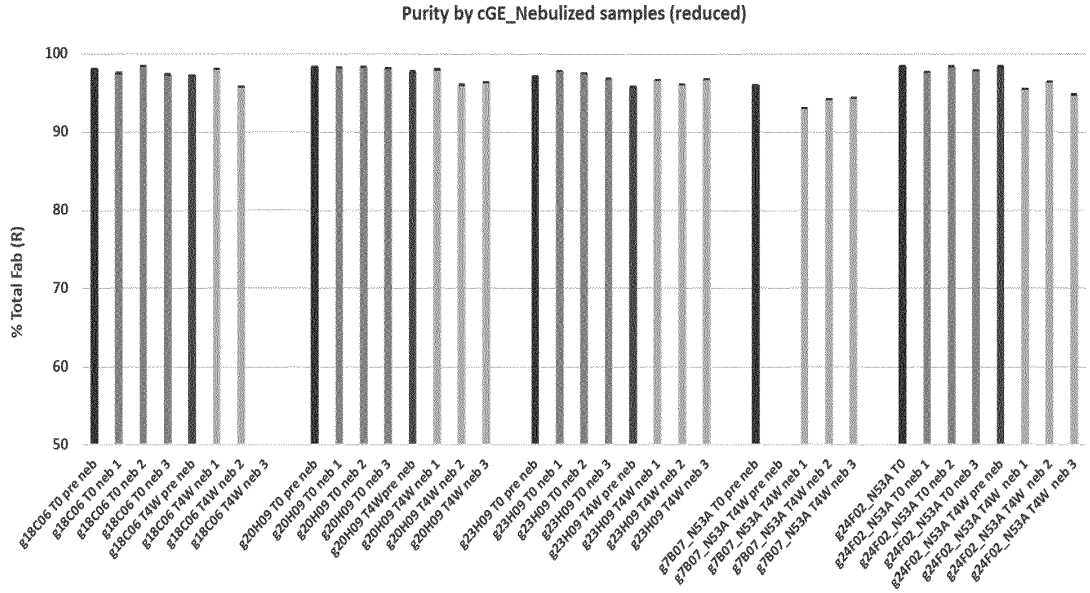

Purity by cGE_Nebulized samples (reduced)
% Total Fab (R)
100
90
80
70
60
50
g18C06 T0 pre neb
g18C06 T0 neb 1
g18C06 T0 neb 2
g18C06 T0 neb 3
g18C06 T4W pre neb
g18C06 T4W neb 1
g18C06 T4W neb 2
g18C06 T4W neb 3
g20H09 T0 pre neb
g20H09 T0 neb 1
g20H09 T0 neb 2
g20H09 T0 neb 3
g20H09 T4Wpre neb
g20H09 T4W neb 1
g20H09 T4W neb 2
g20H09 T4W neb 3
g23H09 T0 pre neb
g23H09 T0 neb 1
g23H09 T0 neb 2
g23H09 T0 neb 3
g23H09 T4W pre neb
g23H09 T4W neb 1
g23H09 T4W neb 2
g23H09 T4W neb 3
g7B07_N53A T0 pre neb
g7B07_N53A T4W pre neb
g7B07_N53A T4W neb 1
g7B07_N53A T4W neb 2
g7B07_N53A T4W neb 3
g24F02_N53A T0
g24F02_N53A T0 neb 1
g24F02_N53A T0 neb 2
g24F02_N53A T0 neb 3
g24F02_N53A T4W pre neb
g24F02_N53A T4W neb 1
g24F02_N53A T4W neb 2
g24F02_N53A T4W neb 3

Figure 12

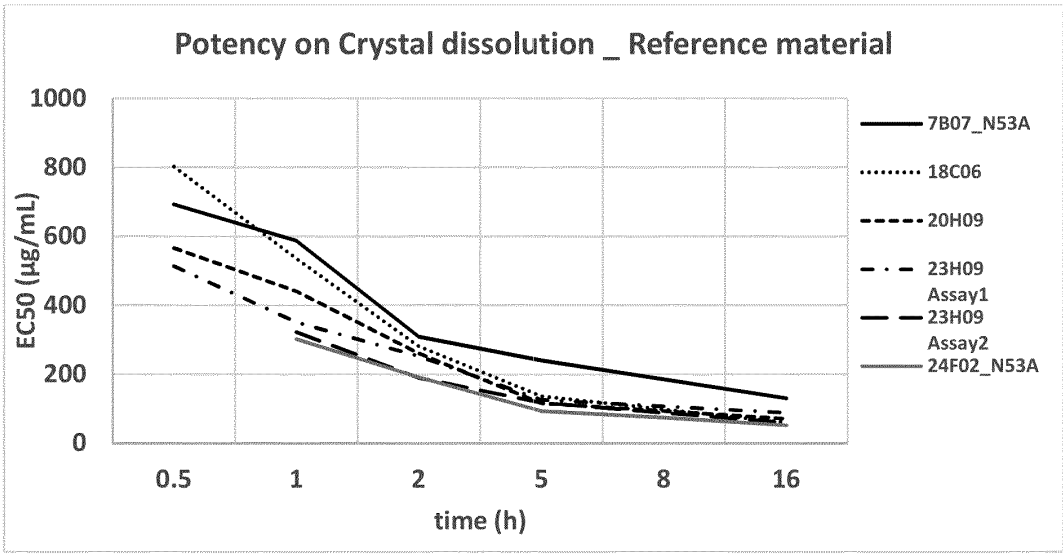
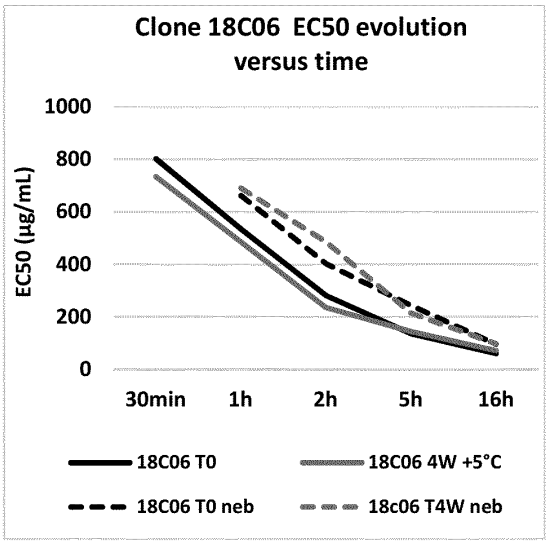
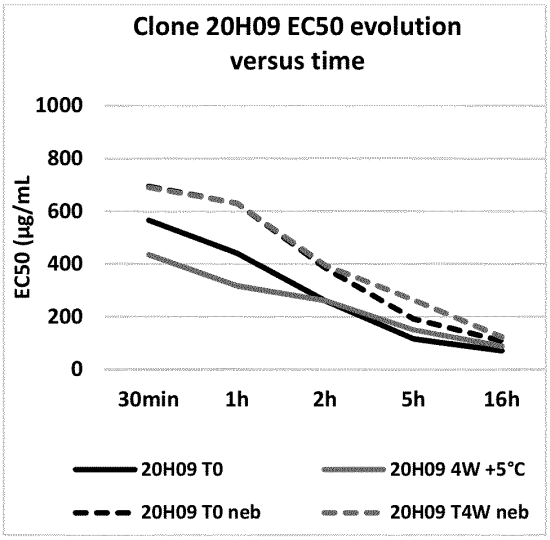
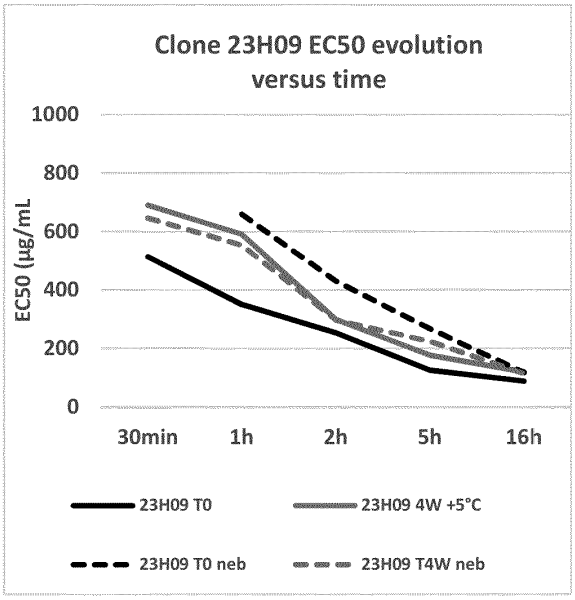
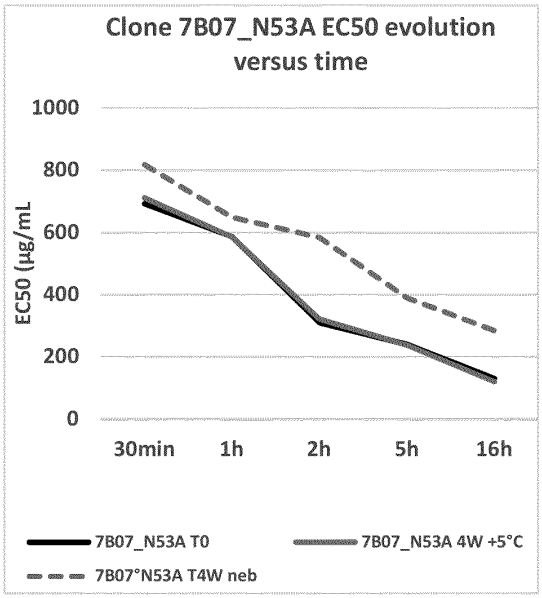

Potency on Crystal dissolution _ Reference material
1000
800
600
400
200
0
EC50 (µg/mL)
0.5
1
2
5
8
16
time (h)
7B07_N53A
18C06
20H09
23H09 Assay1
23H09 Assay2
24F02_N53A

Figure 13


Clone 18C06 EC50 evolution versus time
EC50 (µg/mL)
1000
800
600
400
200
0
30min
1h
2h
5h
16h
18C06 T0
18C06 4W +5°C
18C06 T0 neb
18c06 T4W neb


Clone 20H09 EC50 evolution versus time
EC50 (µg/mL
1000
800
600
400
200
0
30min
1h
2h
5h
16h
20H09 T0
20H09 4W +5°C
20H09 T0 neb
20H09 T4W neb


Clone 23H09 EC50 evolution versus time
EC50 (µg/mL
1000
800
600
400
200
0
30min
1h
2h
5h
16h
23H09 T0
23H09 4W +5°C
23H09 T0 neb
23H09 T4W neb


Clone 7B07_N53A EC50 evolution versus time
EC50 (µg/mL
1000
800
600
400
200
0
30min
1h
2h
5h
16h
7B07_N53A T0
7B07_N53A 4W +5°C
7B07°N53A T4W neb

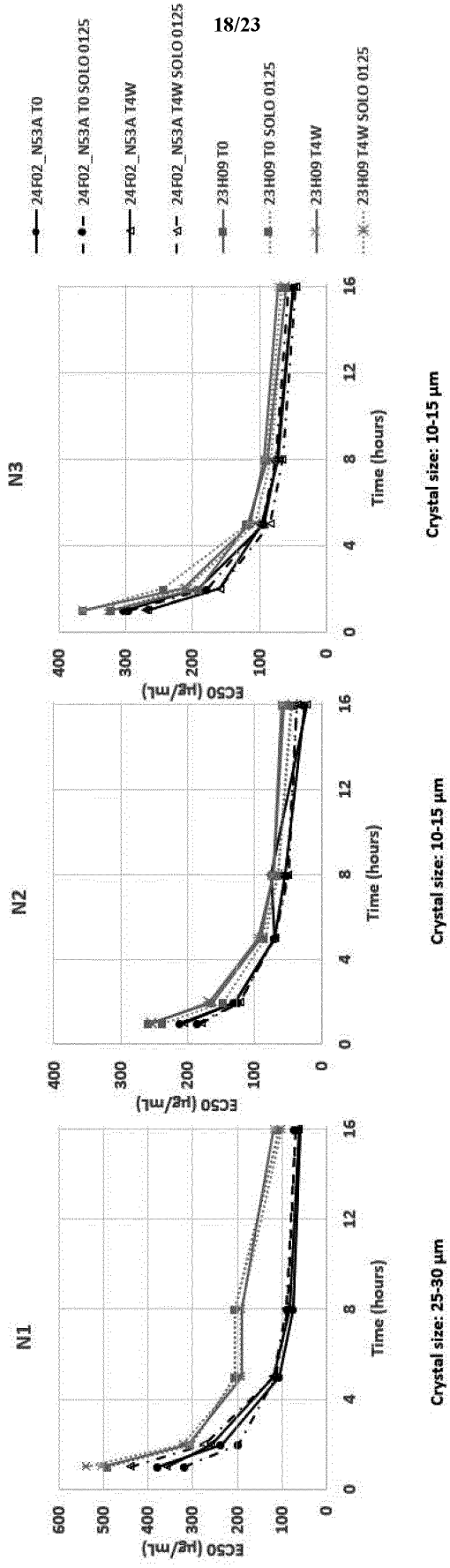

N1
N2
N3
EC50 (µg/mL)
Time (hours)
Crystal size: 25-30 µm
Crystal size: 10-15 µm
Crystal size: 10-15 µm
24F02_N53A T0
24F02_N53A T0 SOLO 0125
24F02_N53A T4W
24F02_N53A T4W SOLO 0125
23H09 T0
23H09 T0 SOLO 0125
23H09 T4W
23H09 T4W SOLO 0125

Figure 14

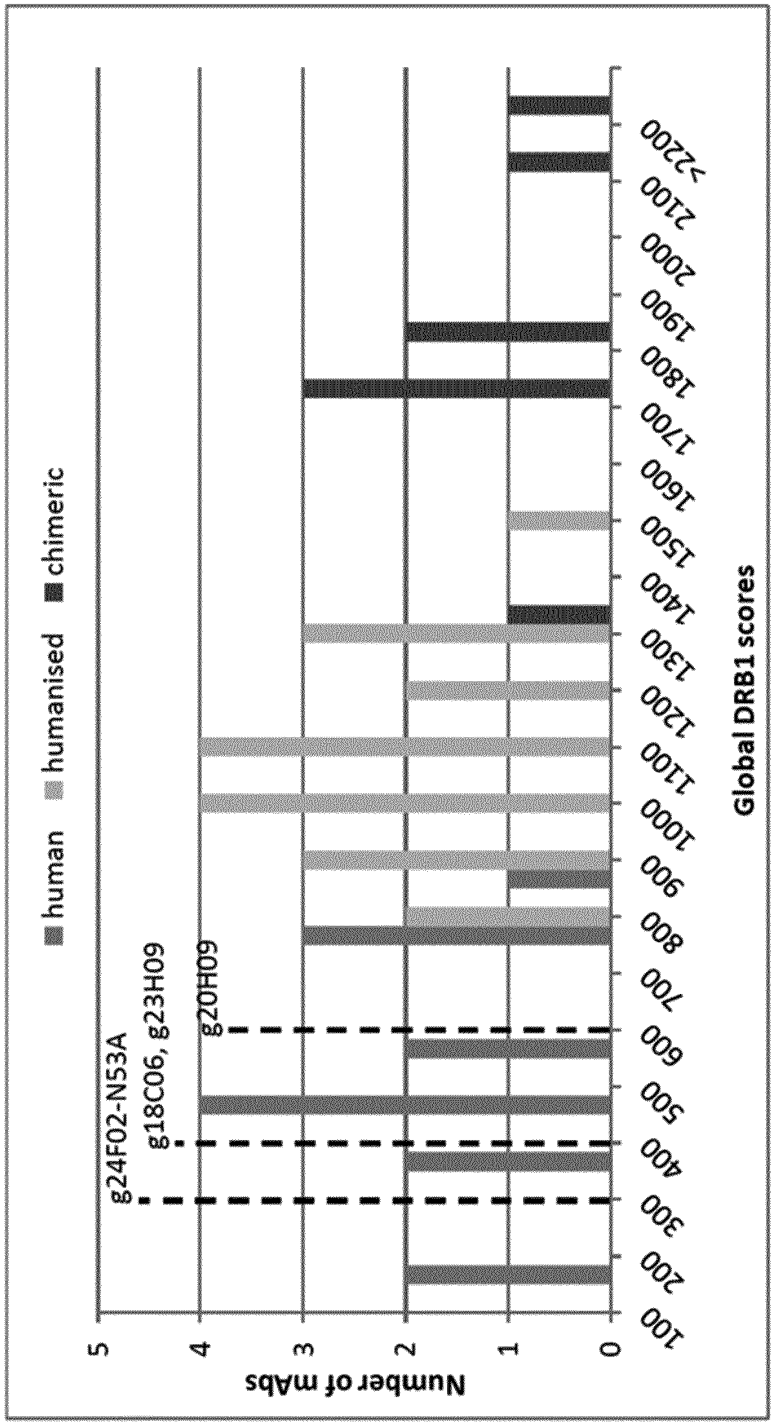

human
humanised
chimeric
g24F02-N53A
g18C06, g23H09
g20H09
Number of mAbs
0
1
2
3
4
5
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
>2200
Global DRB1 scores

Figure 15

Figure 16

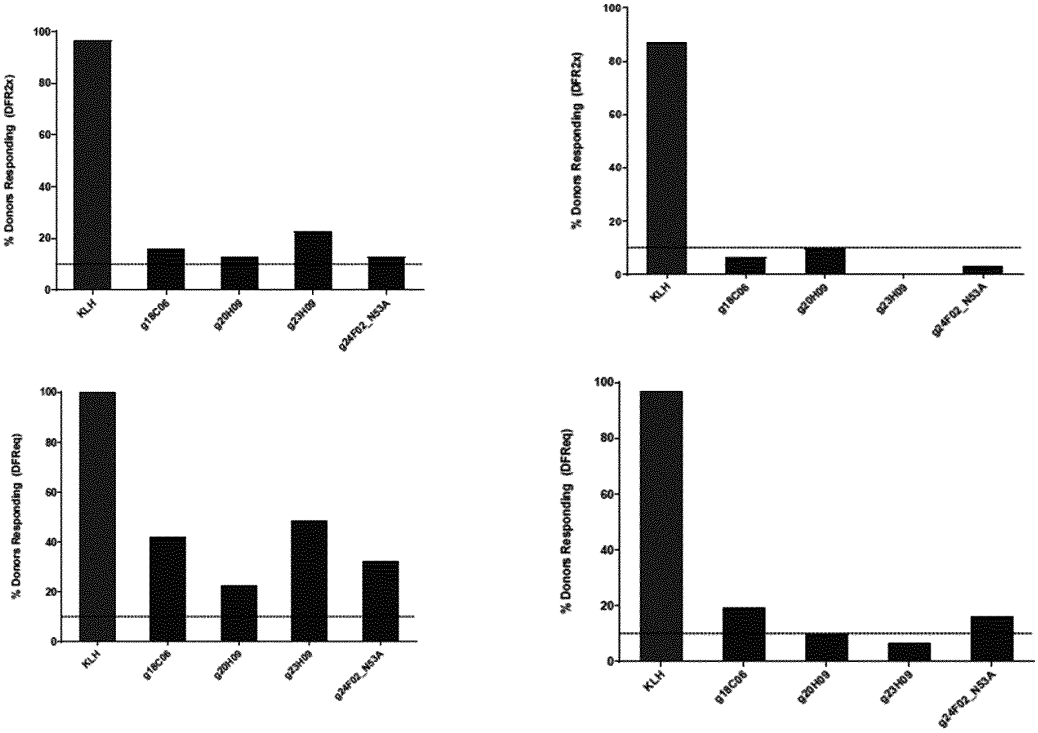
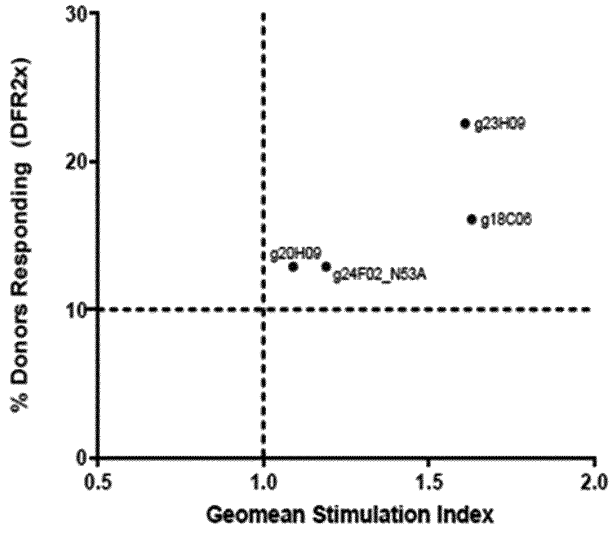

% Donors Responding (DFR2x)
% Donors Responding (DFReq)
KLH
g18C06
g20H09
g23H09
g24F02_N53A

Figure 17


30
20
10
0
% Donors Responding (DFR2x)
g23H09
g18C06
g20H09
g24F02_N53A
0.5
1.0
1.5
2.0
Geomean Stimulation Index

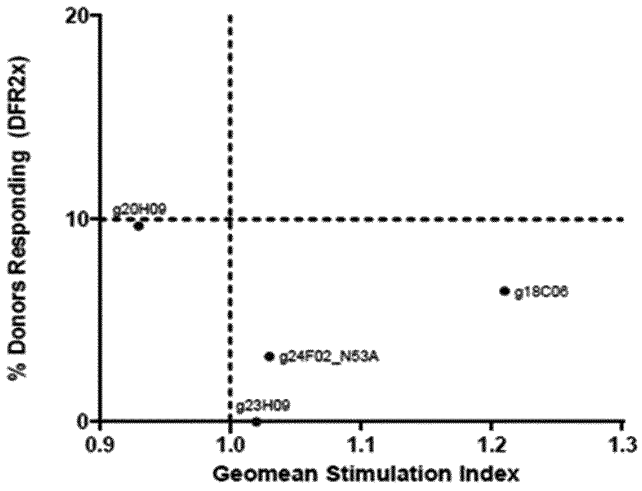

20
10
0
% Donors Responding (DFR2x)
g20H09
g18C06
g24F02_N53A
g23H09
0.9
1.0
1.1
1.2
1.3
Geomean Stimulation Index

Figure 18

Attribute	Criteria/Target	g24F02_N53A	g23H09	g20H09	g18C06	g7B07_N53A
Binding activity	<20% loss in relative activity by SPR for T4W post-nebulization sample relative to reference sample T0	No - 111%	No - 119%	No - 97%	No - 101%	No - 94%
Potency (recombinant Gal10 crystal dissolution)	<20% loss in relative activity for T4W post-nebulization sample relative to unstressed material T0 (at 2hour incubation)	No – 120%	No – 85% (assay 1) -91% (assay 2)	Yes – 66%	Yes – 58%	Yes – 53%
	EC50 µg/mL: Unstressed material (T0, after 2 hour incubation)	Assay 2: 191	Assay 1: 252 Assay 2: 190	Assay 1: 260	Assay 1: 281	Assay 1: 309
	EC50 µg/mL: Stressed material (T4W post-nebulization, after 2 hour incubation)	Assay 2: 159	Assay 1: 297 Assay 2: 209	Assay 1: 395	Assay 1: 485	Assay 1: 584
Purity (SE-HPLC/CE-SDS)	≥90% main peak (monomer), ≤10% HMW & LMW species	Yes	Yes	Yes	SE-HPLC: Yes CE-SDS: No, 87% monomer	Yes
Post-translational modifications	Major liabilities after nebulization	No (minor in LC-CDRs)	No	No	No	No
Subvisible particles (DLS)	PDI range (T4W) pre-/post-nebulization	PDI: 0.12/ 0.12-0.14	PDI: 0.16/ NA	PDI: 0.13/ NA	PDI: 0.13 / 0.06-0.12	PDI: 0.12/ 0.11-0.16
	Mass of main peak (nebulized T0 and T4W)	Non-monomeric species negligible (< 0.1%)	Not exploitable	Not exploitable	Non-monomeric species negligible (< 0.1%)	Non-monomeric species negligible (< 0.1%)
Subvisible particles (FCM)	Total counts/mL T0 (pre/post-nebulization)	2,456/ 21,550	302/ 241,257	1,476/ 212,723	6,547/ 16,201	NA/ NA

Figure 18 continued

	T4W (pre/post-nebulization >2µm/mL	2,606/ 19,713	854/ 292,352	14,063/ 291,462	266/ 23,363	1,827/ 12,104
	T0 (pre/post nebulization)	642/ 4,732	139/ 31,724	292/ 28,532	559/ 2,204	NA/ NA
	T4W (pre/post nebulization)	442/ 4,328	397/ 32,911	1,576/ 49,344	137/ 3,992	802/ 3,118