

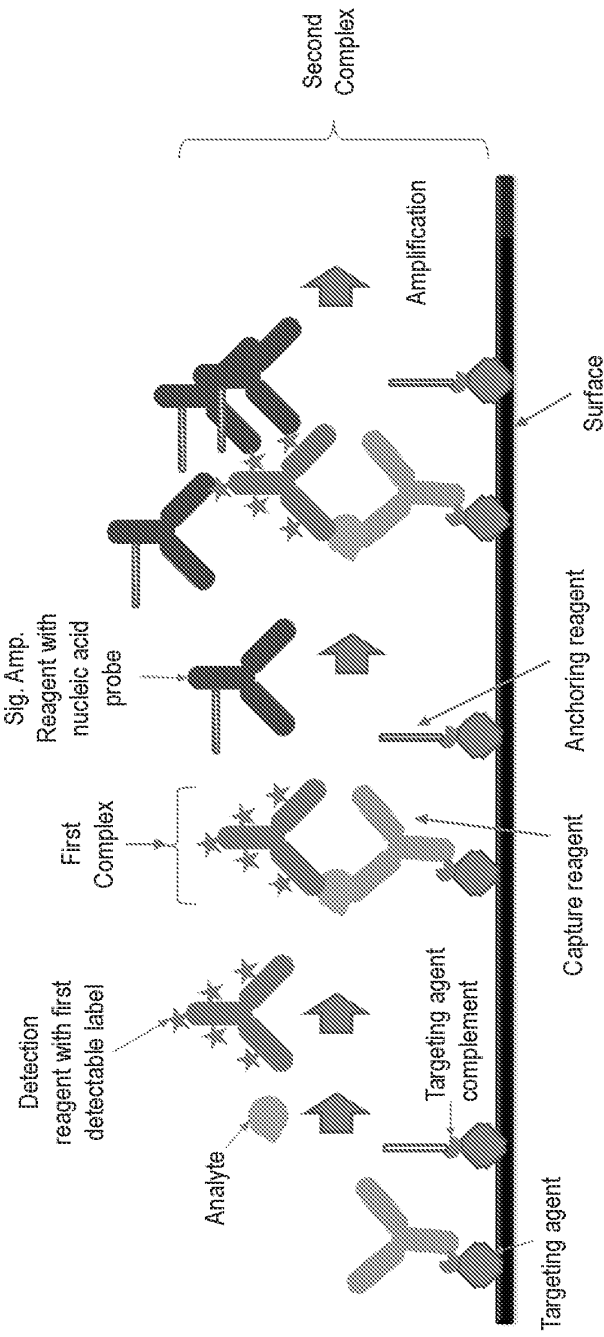


FIG. 1A

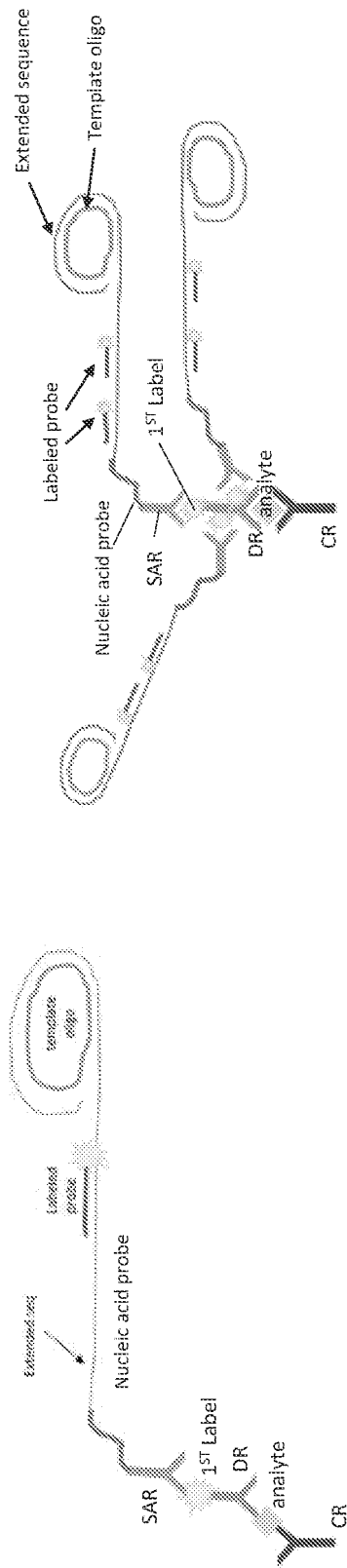


FIG. 1C

FIG. 1B

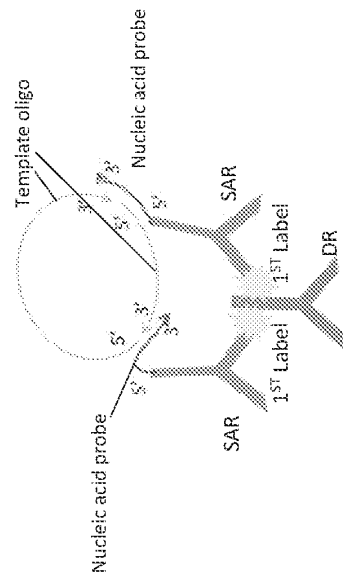


FIG. 1D

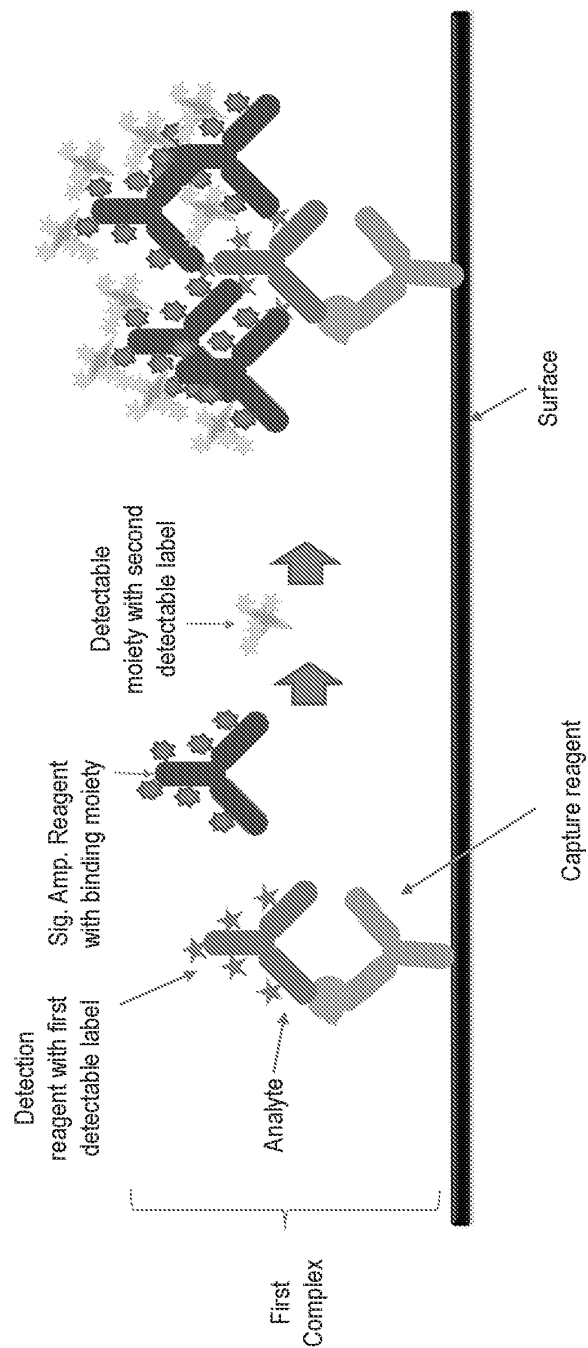


FIG. 2

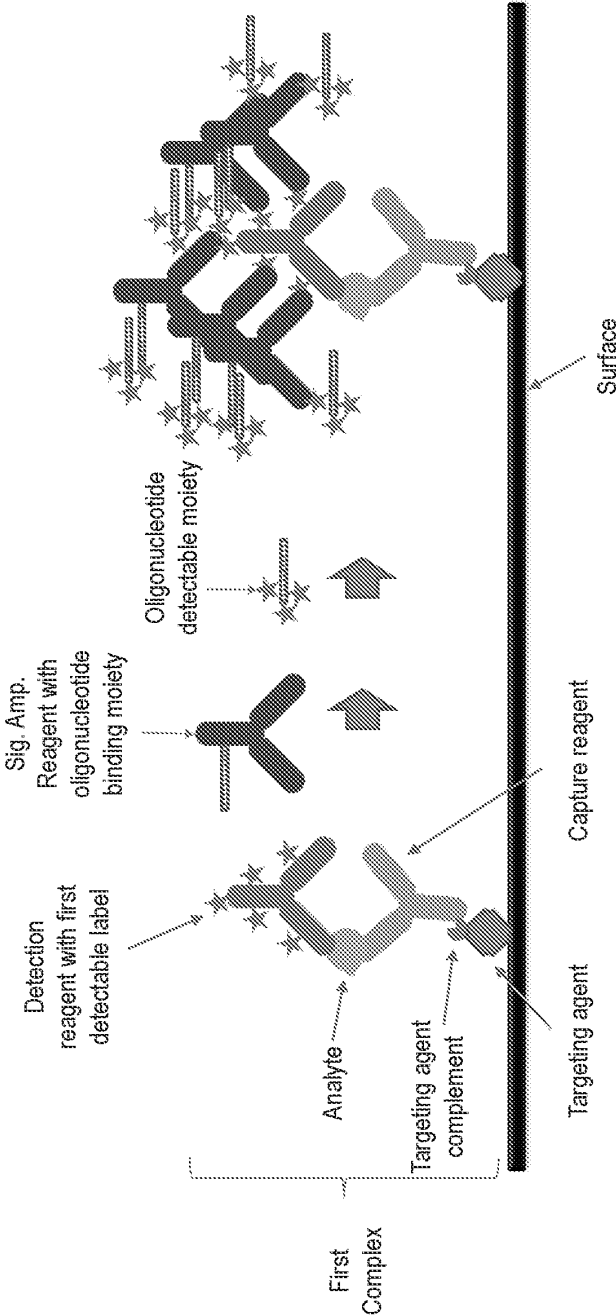


FIG. 3

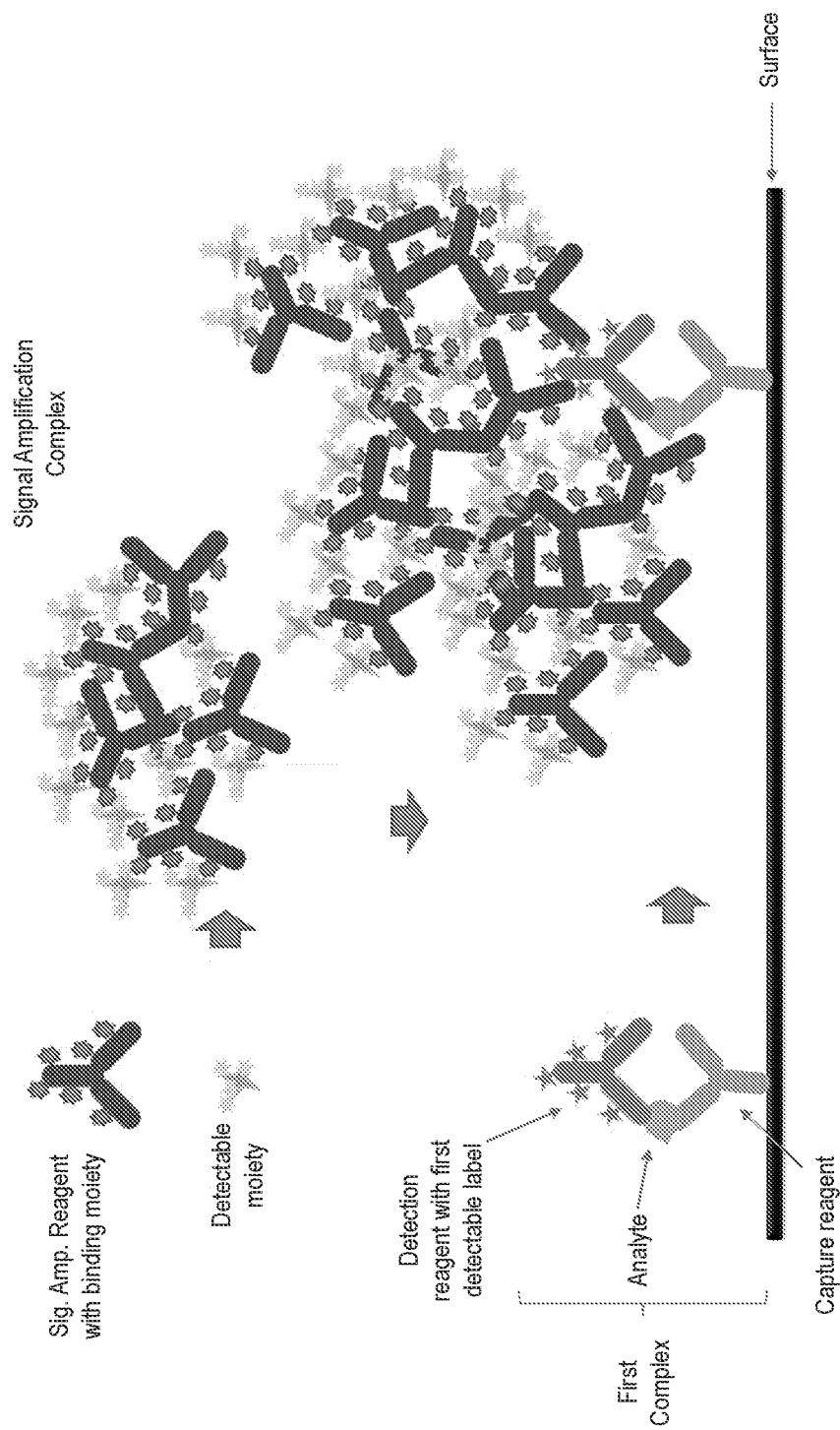


FIG. 4

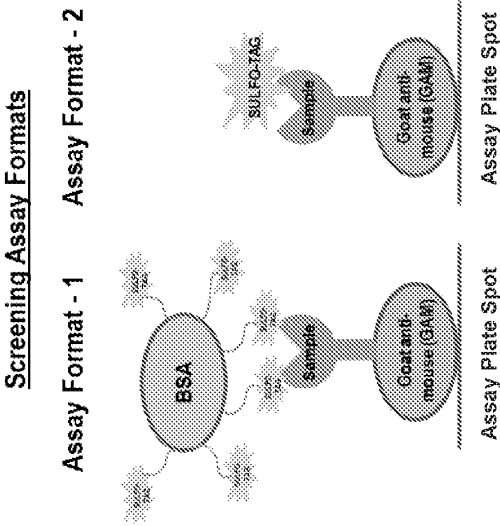


FIG. 5

ECL Assay Signal with Anti-SULFO-TAG Antibody									
Clone Name	Human ZnT8 20 pg/mL		Human IA-2 200 pg/mL		Human TGM-2 (400 pg/mL)		Mouse IL-1b (20 pg/mL)		
	Biotinylated Capture	SULFO-TAG Detect	Biotinylated Capture	SULFO-TAG Detect	Biotinylated Capture	SULFO-TAG Detect	Biotinylated Capture	SULFO-TAG Detect	
	F67-7C2-8	F67-1A7-6	F71-11A1-2t	F71-10A12-7	F74-6A5-6	F69-5E8-3t	RF87-1B3-6	RF87-6B3-10	
Anti-SULFO-TAG Antibody	F136-1B4-8	210,149	839,628		291,140		986,699		
	F136-3A12-2	77,260	328,276		88,161		337,824		
	F136-3F10-6	292,860	1,121,087		432,569		1,469,588		
	F136-5E9-2t	17,781	97,821		32,062		136,450		
	F136-6F9-3	305,881	1,084,435		418,401		1,474,103		
	F136-7D11-4m	125,401	829,990		274,382		914,267		
	F136-8E1-1	64,088	306,621		106,239		480,129		
	F137-6B9-1	38,630	373,240		117,454		455,082		
	F144-4G7-3	13,923	176,253		58,275		194,376		
	F144-8B2-2	32,921	217,305		71,203		288,469		
	F145-10A9-1m	15,670	260,332		62,039		228,476		
	No Anti-SULFO-TAG	1,244	2,012		1,265		3,094		

FIG. 6

Anti-SULFO-TAG Antibody Enhancement of Human ZnT8 Calibrator Titration														
Standards	Clone Number	F136-1B4-8		F136-3F10-6		F136-6F9-3		F136-7D11-4m		F136-8E1-1		F137-6B9-1		
	Concentration (pg/mL)	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	
STD 01	100.00	1,089,575	1.3	1,424,443	2.0	1,445,944	0.0	842,035	9.9	463,623	2.9	231,297	4.9	
STD 02	25.00	283,098	14.4	485,020	5.6	496,661	3.0	178,203	4.2	107,160	0.5	58,327	14.3	
STD 03	6.25	62,414	29.0	124,156	1.6	119,301	3.8	30,381	62.3	27,532	2.9	16,284	4.5	
STD 04	1.56	21,579	0.3	37,988	2.1	29,102	9.4	13,223	2.3	8,608	0.3	7,332	5.8	
STD 05	0.39	9,656	0.4	19,605	0.1	11,259	1.8	5,578	1.6	4,227	0.6	4,986	12.8	
STD 06	0.10	6,410	3.2	13,471	5.2	5,869	9.8	3,875	2.1	3,152	10.4	4,427	8.6	
STD 07	0.02	5,946	4.1	12,817	2.0	5,114	4.1	3,438	1.3	2,998	6.7	4,378	3.9	
STD 08	0.00	5,338	4.4	13,224	7.1	4,099	6.5	3,192	0.6	2,801	3.2	4,213	0.3	
	Hill Slope	1.03		1.09		1.07		1.13		1.05		1.05		
	R squared	1.00		1.00		1.00		1.00		1.00		1.00		
	LLOD	0.01		0.01		0.02		0.03		0.03		0.05		
	S/B (STD 04/STD 08)	4		3		7		4		3		2		
	S/N (STD 04/STD 08)	20		14		36		21		15		9		

FIG. 7

Anti-SULFO-TAG Antibody Enhancement of Human TGM-2 Calibrator Titration													
Standard s	Clone Number	F136-1B4-8		F136-3F10-6		F136-6F9-3		F136-7D11-4m		F136-8E1-1		F137-6B9-1	
		Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%
STD 01	1,000.00	869,251	1.8	1,229,535	0.6	1,219,217	2.3	992,555	30.4	293,167	4.4	378,602	18.9
STD 02	250.00	203,943	1.5	294,626	22.5	334,042	6.4	197,153	3.5	83,422	5.3	91,111	28.3
STD 03	62.50	49,051	1.2	88,863	0.9	81,365	6.4	53,615	6.4	21,041	1.7	25,648	5.7
STD 04	15.63	17,249	4.1	31,907	1.5	22,786	0.9	14,433	0.8	7,157	1.1	9,987	1.8
STD 05	3.91	8,532	2.3	18,259	4.1	9,217	6.2	6,327	1.7	4,060	2.1	6,721	1.4
STD 06	0.98	5,804	6.4	15,699	7.3	6,492	2.6	4,433	2.4	3,466	4.3	5,881	4.7
STD 07	0.24	6,265	1.4	15,447	0.5	5,477	5.9	3,918	3.1	3,294	0.2	6,027	0.0
STD 08	0.00	5,512	6.2	14,240	1.2	5,029	6.7	3,574	1.9	3,248	2.2	5,504	1.3
Hill Slope		1.05		1.02		1.06		1.07		1.12		1.07	
R squared		1.00		1.00		1.00		1.00		1.00		1.00	
LLOD		0.39		0.20		0.46		0.32		0.47		0.35	
S/B (STD 04/STD 08)		3		2		5		4		2		2	
S/N (STD 04/STD 08)		16		11		23		20		11		9	

FIG. 8

Comparison Data for Human ZnT8 and Human TGM-2 (Assays without Anti-SULFO-TAG Antibody)									
Analyte		Human ZnT8				Analyte		Human TGM-2	
Capture		F67-7C2-8				Capture		F74-6A5-6	
Detect		F67-1A7-6				Detect		F69-5E8-3t	
Standards	Conc. (pg/ml)	Avg ECL	CV%	Standards	Conc. (pg/ml)	Avg ECL	CV%		
STD 01	5,000.00	599,672	2.4	STD 01	100,000	1,302,398	1.8		
STD 02	1,250.00	273,168	3.7	STD 02	25,000	409,736	4.1		
STD 03	312.5	75,165	0.8	STD 03	6250	99,438	1.9		
STD 04	78.1	19,069	2.0	STD 04	1563	25,107	1.3		
STD 05	19.5	4,695	1.5	STD 05	391	5,933	3.5		
STD 06	4.9	1,310	4.5	STD 06	98	1,617	2.8		
STD 07	1.2	397	1.8	STD 07	24	447	7.1		
STD 08	0	59	10.9	STD 08	0	72	28.7		
Hill Slope		1.00		Hill Slope		1.02			
R squared		1.00		R squared		1.00			
LLOD		0.29		LLOD		5.11			
S/B (STD 04/STD 08)		326		S/B (STD 04/STD 08)		351			
S/N (STD 04/STD 08)		1,239		S/N (STD 04/STD 08)		1,439			

FIG. 9

Anti-SULFO-TAG Antibody Enhancement of Mouse IL-23 Calibrator Titration													
	Clone Number	F136-1B4-8		F136-3F10-6		F136-6F9-3		F136-7D11-4m		F136-8E1-1		F137-6B9-1	
Standards	Concentration (pg/mL)	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%
STD 01	79.69	371,697	6.5	425,778	8.5	508,084	2.6	322,382	15.2	144,442	5.9	165,110	0.3
STD 02	4.98	20,684	9.9	28,732	2.2	27,397	5.8	18,928	6.7	8,717	2.7	9,241	0.8
STD 03	0.31	2,290	1.1	4,842	4.5	2,588	3.5	1,836	4.1	1,101	2.4	1,383	3.1
STD 04	0	930	9.4	3,323	11.3	1,143	3.5	647	5.6	596	0.4	876	0.1
	Hill Slope	1.03		1.02		1.06		1.02		1.03		1.06	
	R squared	1.00		1.00		1.00		1.00		1.00		1.00	
	LLOD	0.021		0.114		0.025		0.026		0.051		0.058	
	S/B (STD 02/STD 04)	22		9		24		29		15		11	
	S/N (STD 02/STD 04)	111		43		120		146		73		53	

FIG. 10

Anti-SULFO-TAG Antibody Enhancement of Mouse IL-17C Calibrator Titration													
Standards	Clone Number	F136-1B4-8		F136-3F10-6		F136-6F9-3		F136-7D11-4m		F136-8E1-1		F137-6B9-1	
	Concentration (pg/mL)	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%
STD 01	178.13	740,503	6.8	1,005,824	3.2	1,052,707	0.9	733,413	1.5	325,900	3.7	348,373	0.5
STD 02	11.13	55,314	3.4	69,500	3.8	64,867	5.3	49,239	3.3	22,511	1.6	23,026	17.8
STD 03	0.7	14,324	0.0	18,654	3.7	17,153	0.7	8,968	18.7	4,509	6.7	6,333	1.8
STD 04	0	10,730	3.4	14,653	1.3	12,926	3.1	7,408	3.1	3,510	14.1	5,044	1.8
Hillslope		1.00		1.04		1.07		1.19		1.06		1.06	
Rsquared		1.00		1.00		1.00		1.00		1.00		1.00	
LLOD		0.018		0.113		0.090		0.299		0.538		0.178	
S/B (STD 02/STD 04)		5		5		5		7		6		5	
S/N (STD 02/STD 04)		26		24		25		33		32		23	

FIG. 11

Comparison Data for Mouse IL-23 and Mouse IL-17C (Assays without Anti-SULFO-TAG Antibody)									
Analyte			Mouse IL-23			Mouse IL-17C			
Capture			AF1619			MAB2306			
Detect			MAB4991			AF2306			
Standards	Conc. (pg/ml)	Avg	CV%	Standards	Conc. (pg/ml)	Avg	CV%		
STD 01	20,400	373,508	1.5	STD 01	45,600	2,847,357	0.5		
STD 02	5,100	120,184	1.1	STD 02	11,400	1,020,146	1.3		
STD 03	1275	31,957	1.2	STD 03	2850	260,634	1.3		
STD 04	319	8,065	1.4	STD 04	713	62,529	2.1		
STD 05	79.7	2,193	1.6	STD 05	178	15,942	1.7		
STD 06	19.9	664	2.3	STD 06	45	4,006	1.6		
STD 07	5.0	308	3.9	STD 07	11	1,211	1.4		
STD 08	0	185	9.0	STD 08	0	205	7.0		
LLOD			4.9	LLOD			2.3		

FIG. 12

Anti-SULFO-TAG Antibody Enhancement of Human IL-10 Calibrator Titration													
Standards	Clone Number	F136-1B4-8		F136-3F10-6		F136-6F9-3		F136-7D11-4m		F136-8E1-1		F137-6B9-1	
	Concentration (pg/mL)	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%	Average ECL	Average ECL CV%
STD 01	10	1,258,766	1.5	1,279,151	1.5	1,359,035	1.5	1,097,899	1.7	612,860	4.6	811,468	2.0
STD 02	0.63	81,752	1.0	91,823	1.4	97,975	1.4	68,517	7.1	38,408	1.4	42,023	10.6
STD 03	0.04	9,142	4.6	11,581	0.5	11,463	1.3	5,846	1.0	4,340	2.8	4,570	5.3
STD 04	0	4,378	0.2	5,928	6.6	5,172	1.7	1,330	4.9	1,771	2.4	1,605	1.4
Hillslope		1.01		0.98		0.97		0.99		1.00		1.03	
Rsquared		1.00		1.00		1.00		1.00		1.00		1.00	
LLOD		0.00063		0.00101		0.00124		0.00131		0.00167		0.00128	
S/B (STD 02/STD 04)		19		15		19		52		22		26	
S/N (STD 02/STD 04)		93		77		95		257		108		131	

FIG. 13

Comparison Data for Human IL-10 (Assays without Anti-SULFO-TAG Antibody)				
Analyte		Human IL-10		
Capture		2108-A82-8		
Detect		1299-A06-5		
Standards	Conc. (pg/ml)	Avg	CV%	
STD 01	1,858	1,088,999	1.7	
STD 02	465	351,459	2.2	
STD 03	116	102,710	1.9	
STD 04	29	26,564	1.6	
STD 05	7.3	6,756	3.4	
STD 06	1.8	1,834	2.3	
STD 07	0.5	548	7.7	
STD 08	0	151	21.1	
LLOD		0.09		

FIG. 14

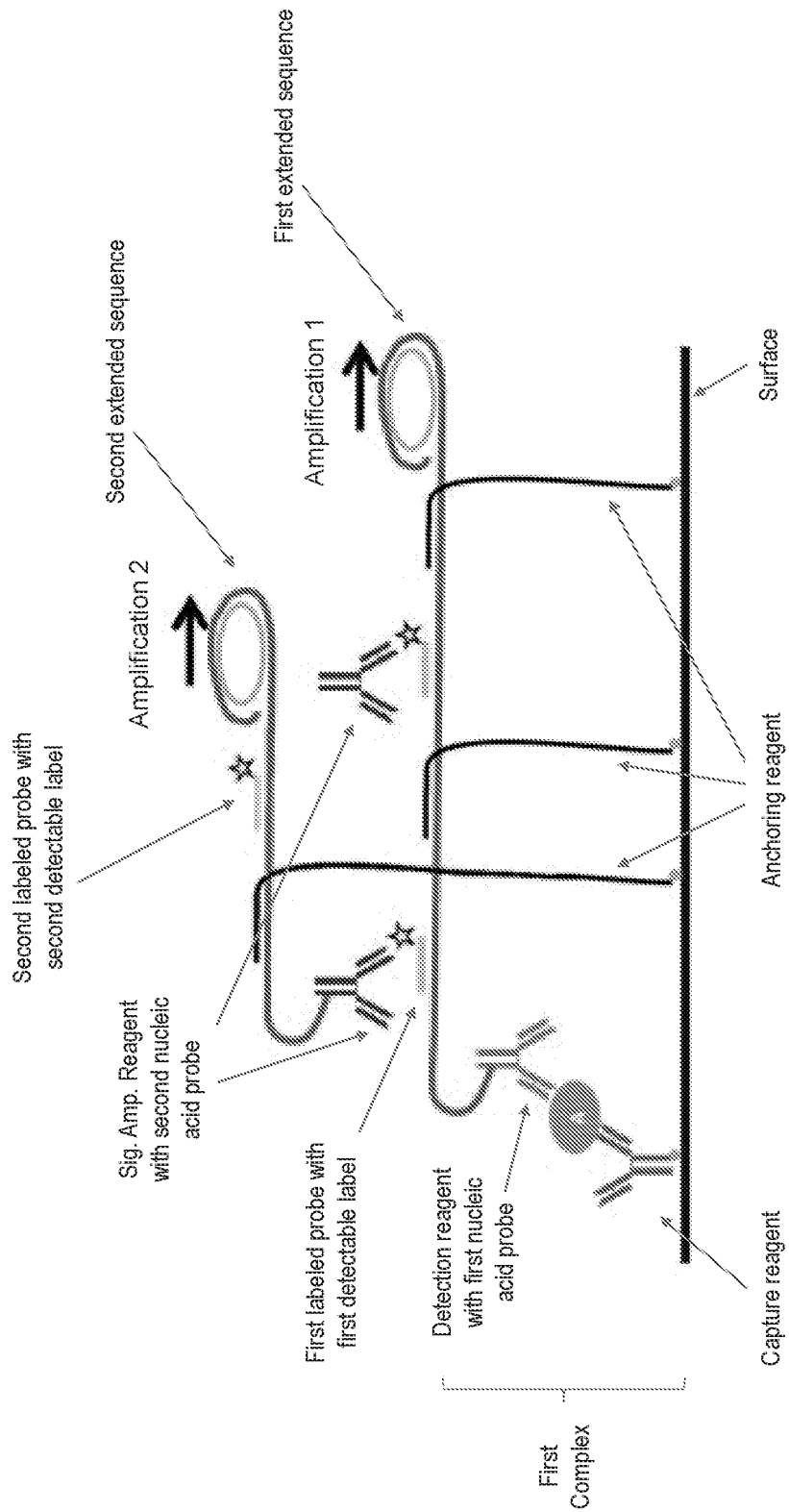


FIG. 15

% Signal Inhibition			% Signal Increase		
1-(Signal Inhibition/Standard Signal)			(Signal Increase - Signal Inhibition)/MAX		
#	a-STAG Ab Clone ID	AVR	STDEV (n=8)	AVR	STDEV (n=8)
1	F136-1E4-8	63%	3%	71%	6%
2	F136-3A12-2	22%	6%	20%	2%
3	F136-3F10-6	58%	3%	87%	3%
4	F136-6E9-2i	32%	4%	27%	3%
5	F136-8F9-3	55%	3%	100%	0%
6	F136-7D11-4m	28%	4%	21%	4%
7	F136-8E1-1	36%	4%	38%	3%
8	F137-6S9-1	21%	4%	12%	3%
9	F144-4G7-3	6%	9%	11%	5%
10	F144-8E2-2	21%	6%	22%	3%
11	F145-10A9-1m	15%	5%	10%	2%

FIG. 16A

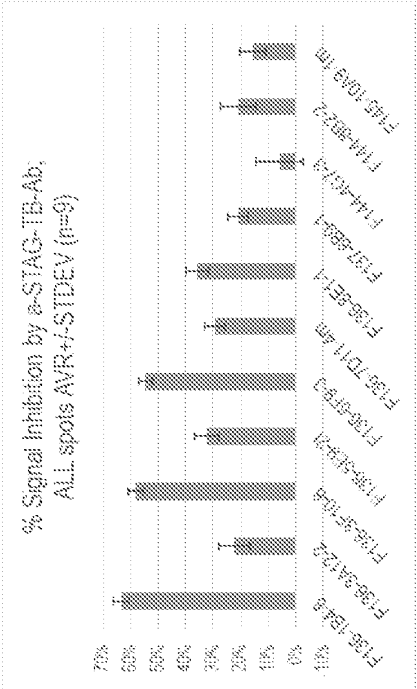


FIG. 16B

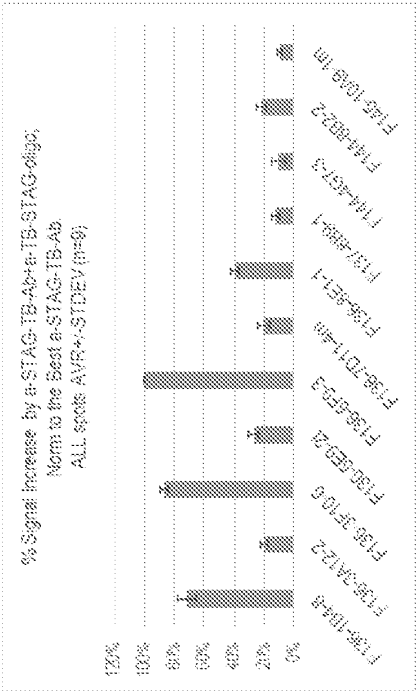


FIG. 16C

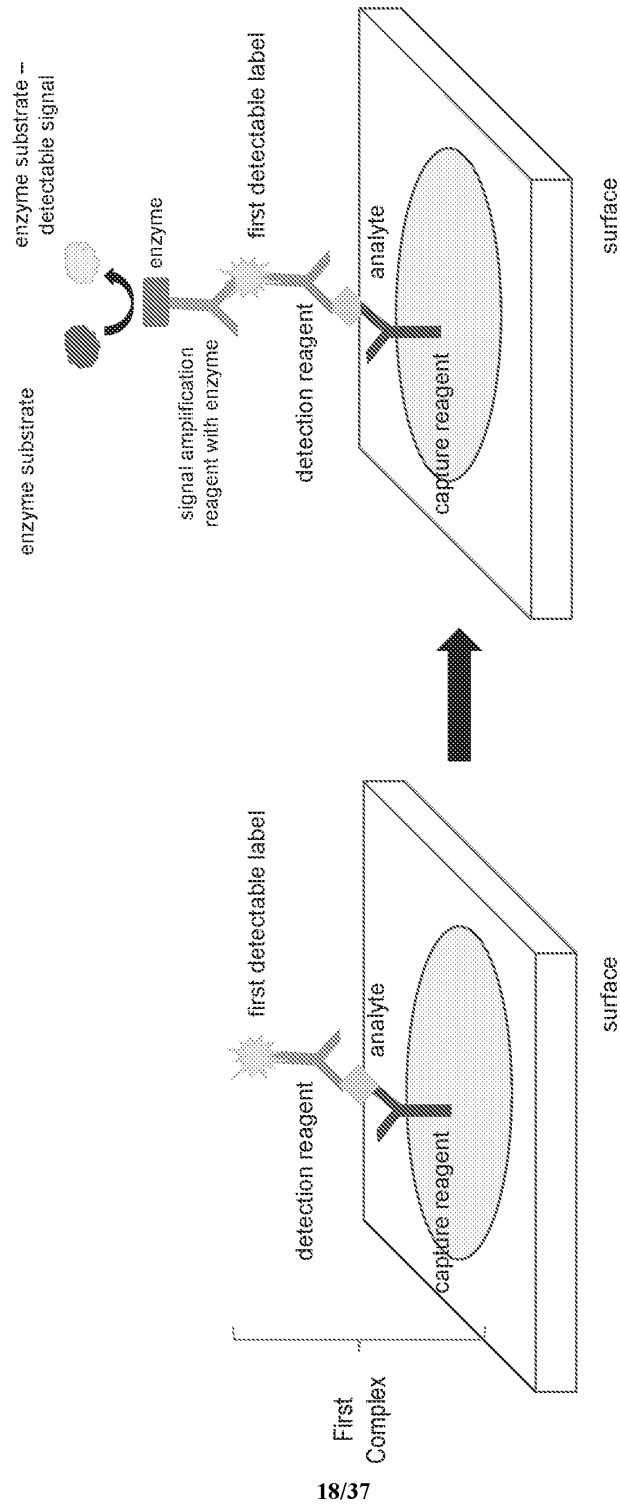


FIG. 17

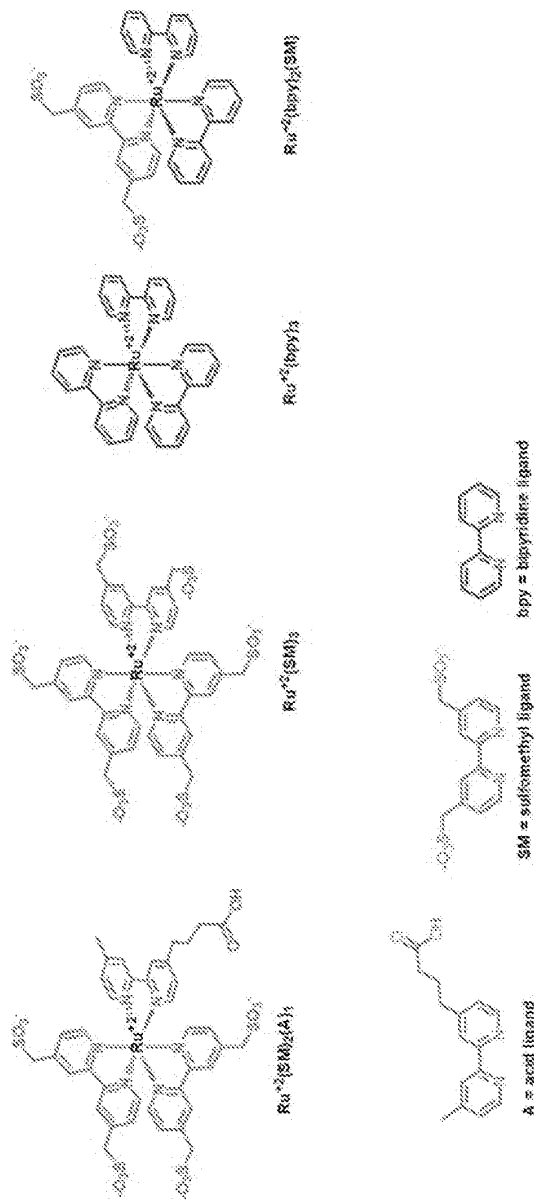


FIG. 18A

	TAQ at 625 nm	TAQs at 395 nm	
Values	$\text{Ru}(\text{Bpy})_3$	$\text{Ru}(\text{Bpy})_2\text{SM}$	$\text{Ru}(\text{SM})_3$
ECL	393317	203263	217902
StdDev of ECL	9315	3764	5752
			4114

FIG. 18B

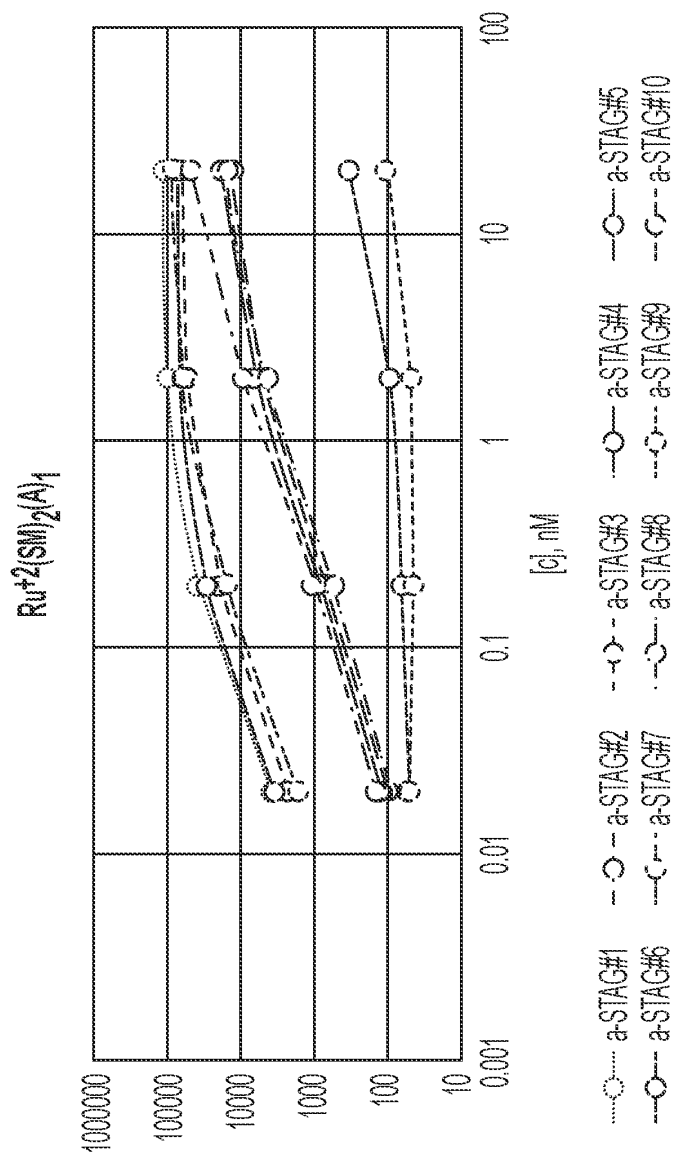


FIG. 19

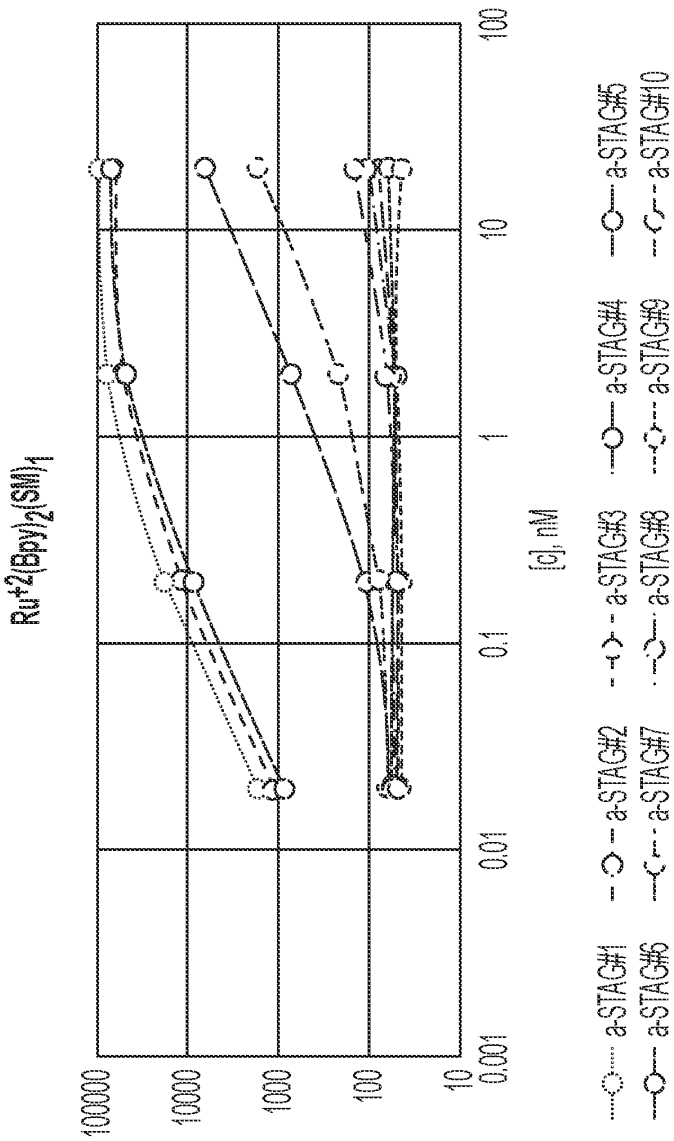


FIG. 19
(cont'd)

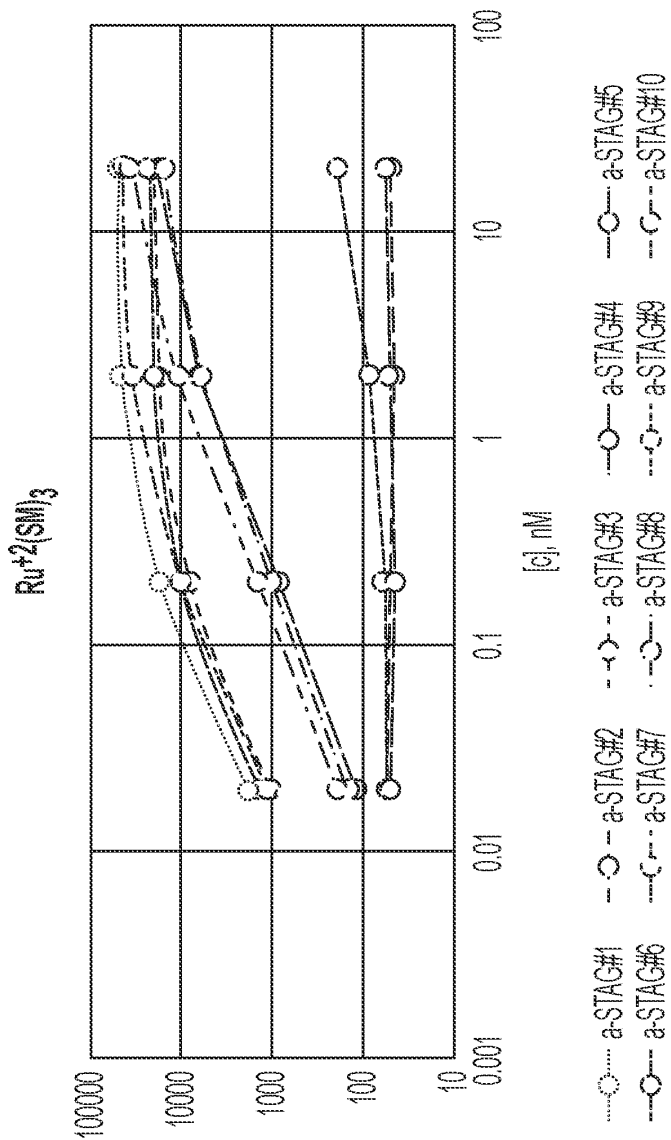


FIG. 19
(cont'd)

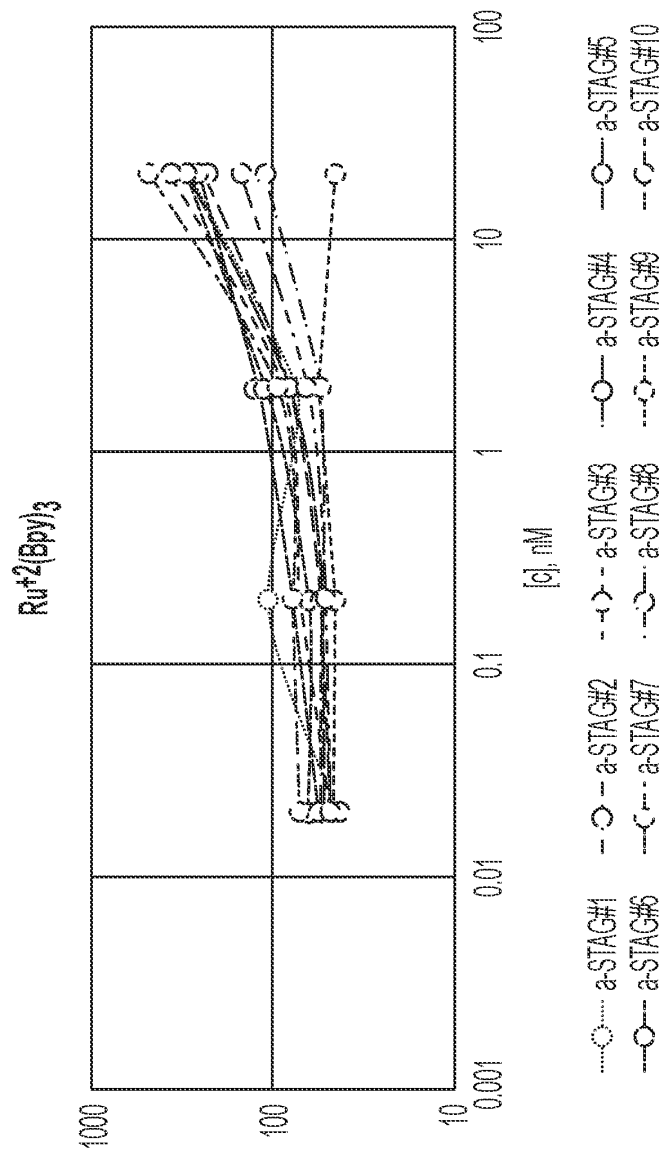


FIG. 19
(cont'd)

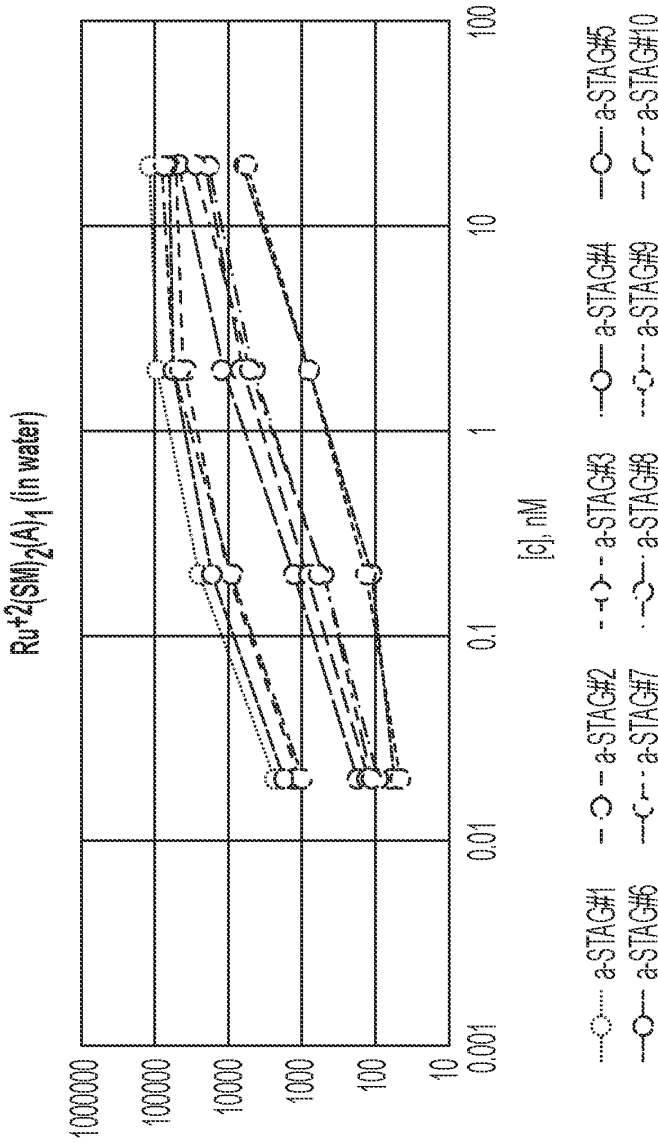


FIG. 19
(cont'd)

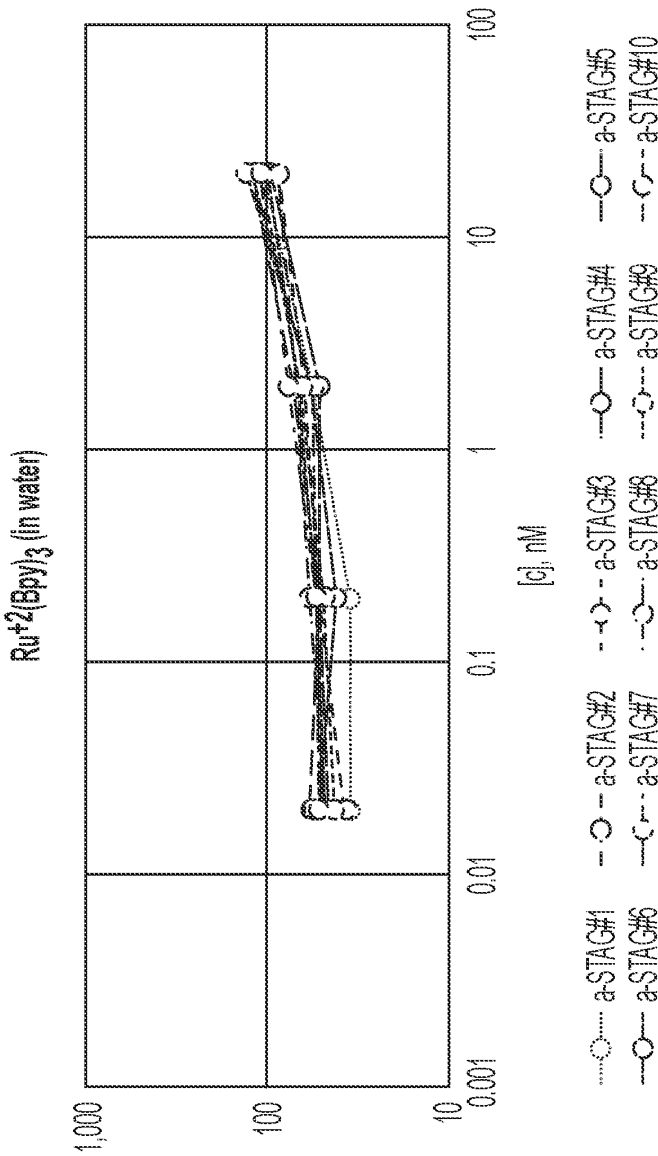


FIG. 19
(cont'd)

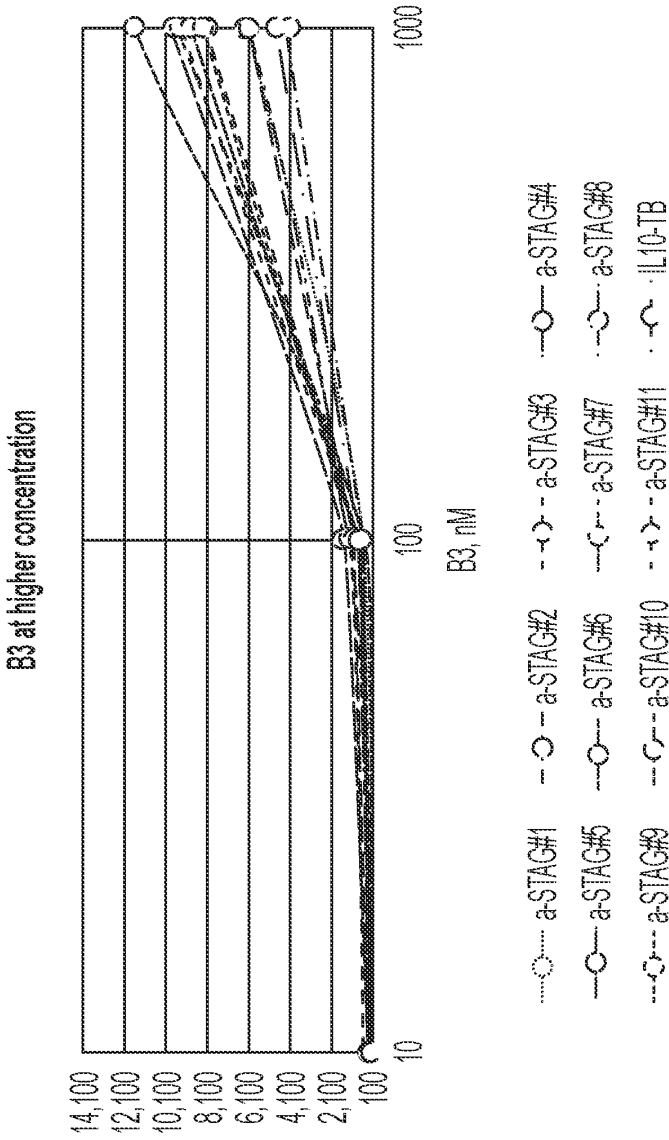


FIG. 19
(cont'd)

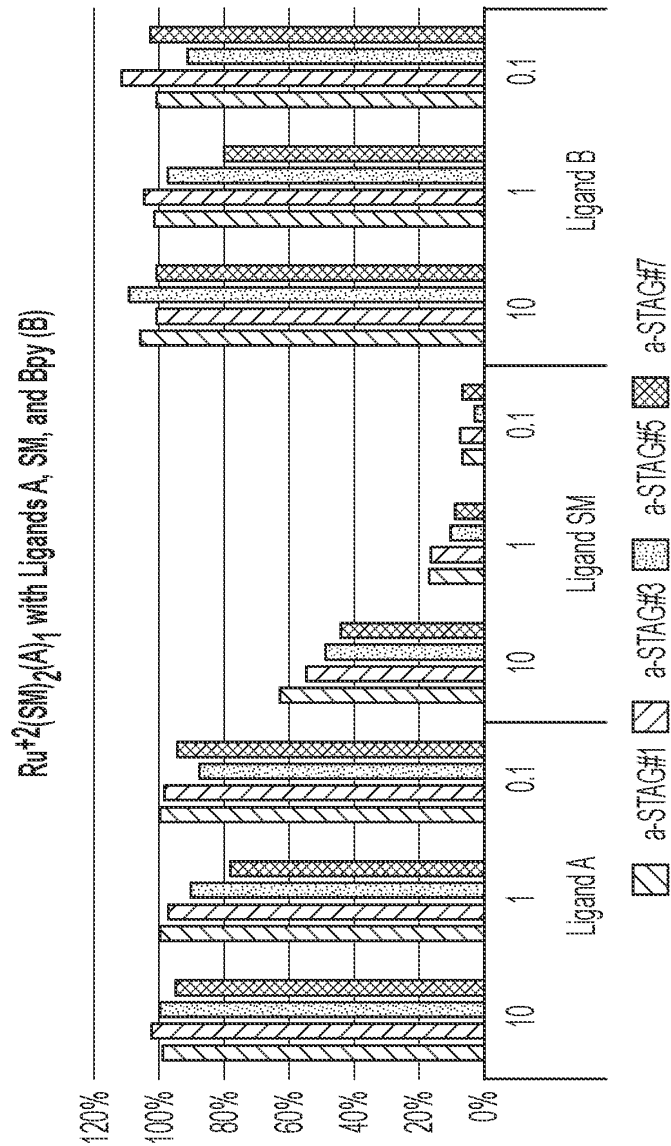


FIG. 20

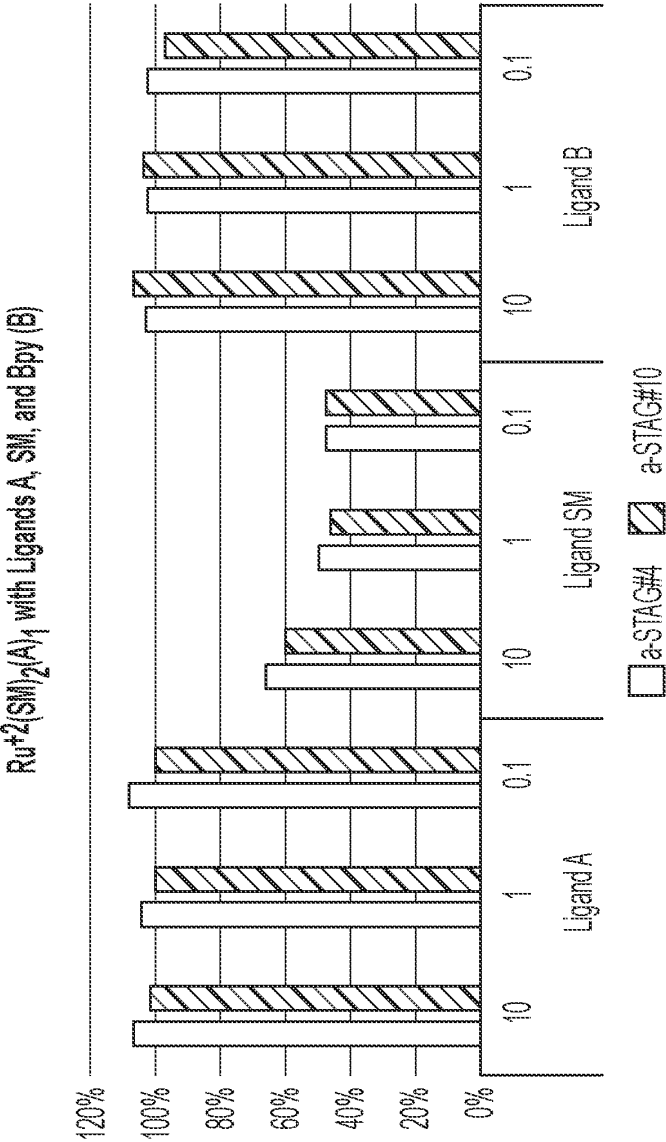


FIG. 20
(cont'd)

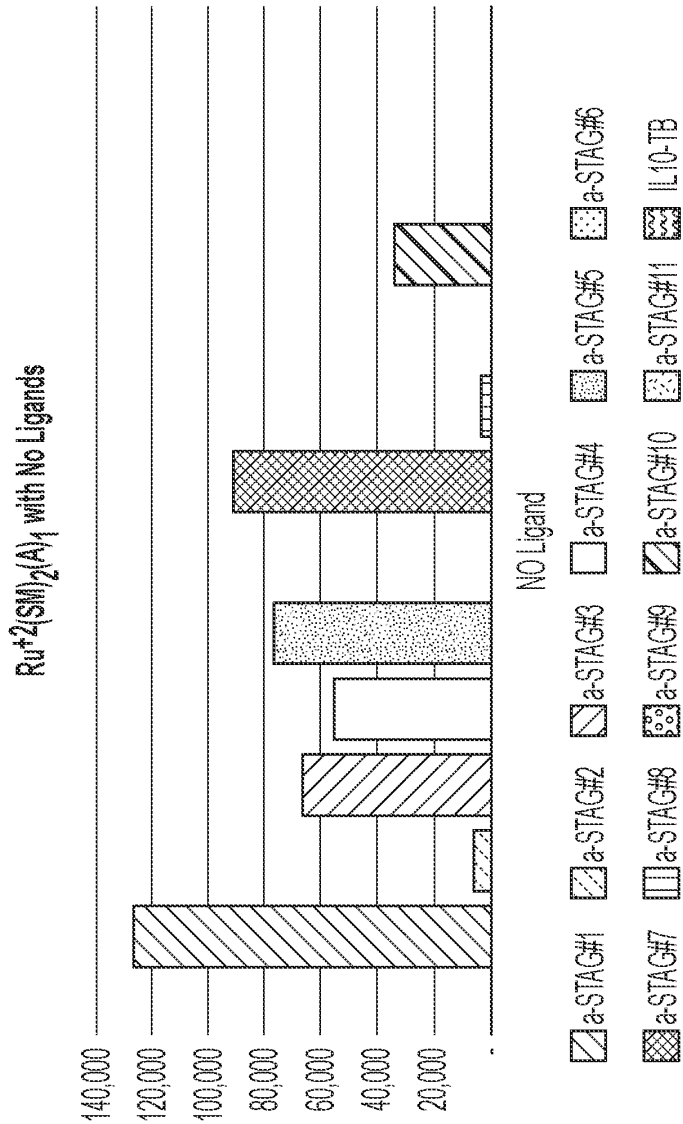


FIG. 20
(cont'd)

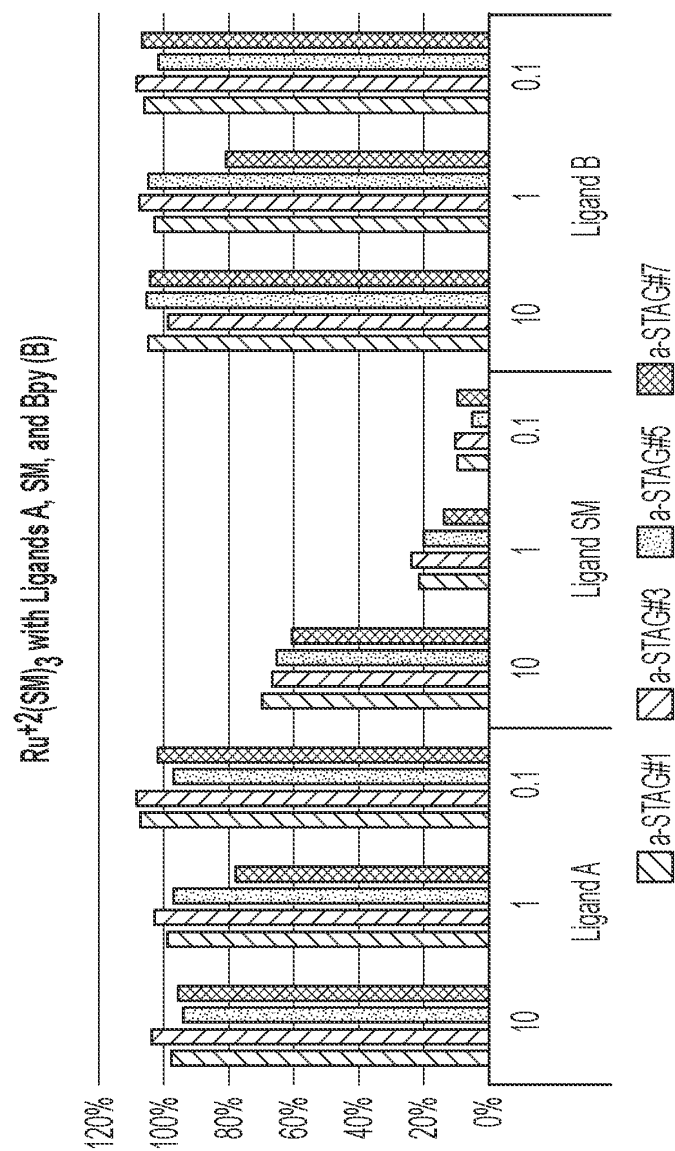


FIG. 20
(cont'd)

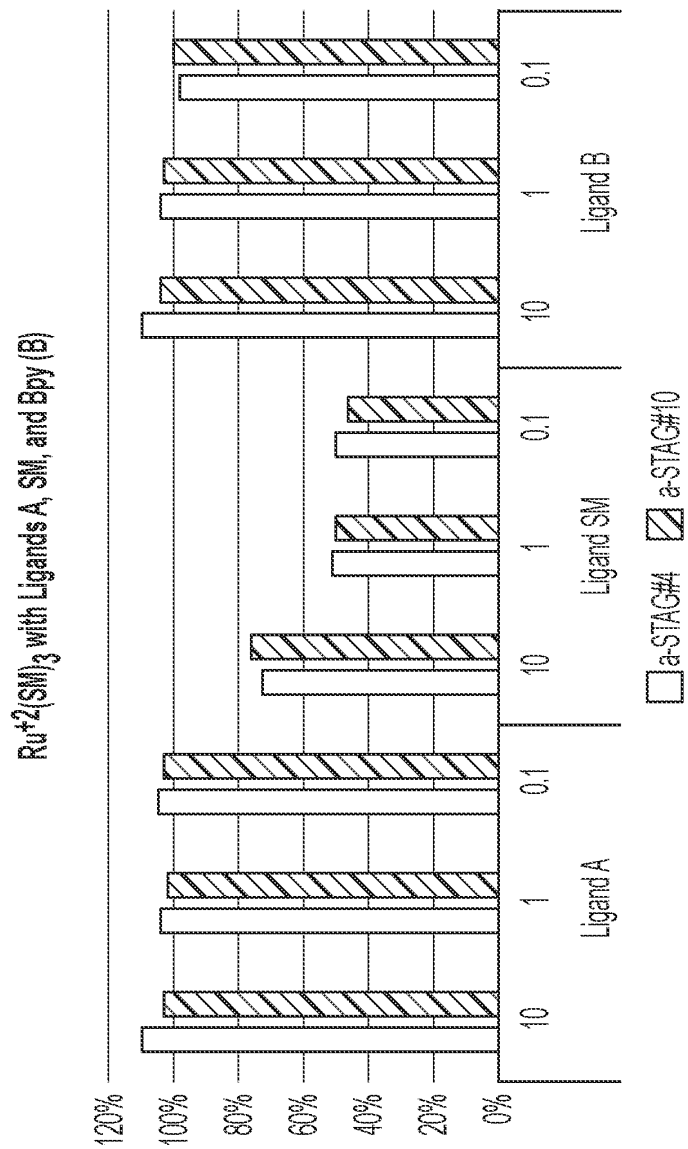


FIG. 20
(cont'd)

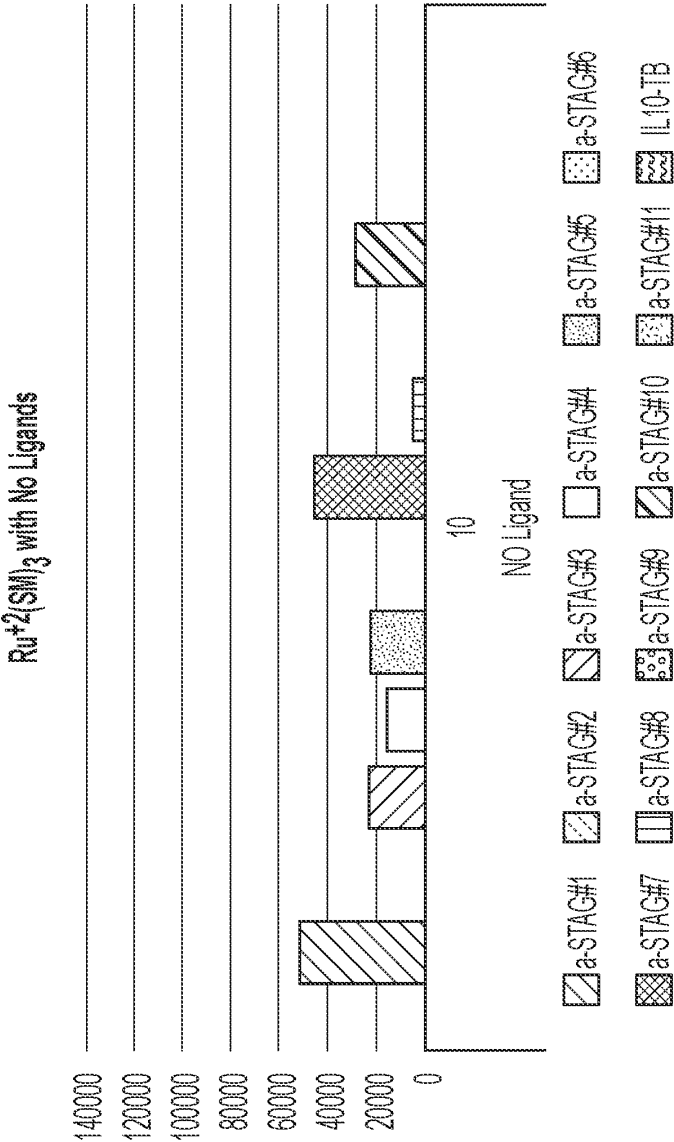


FIG. 20
(cont'd)

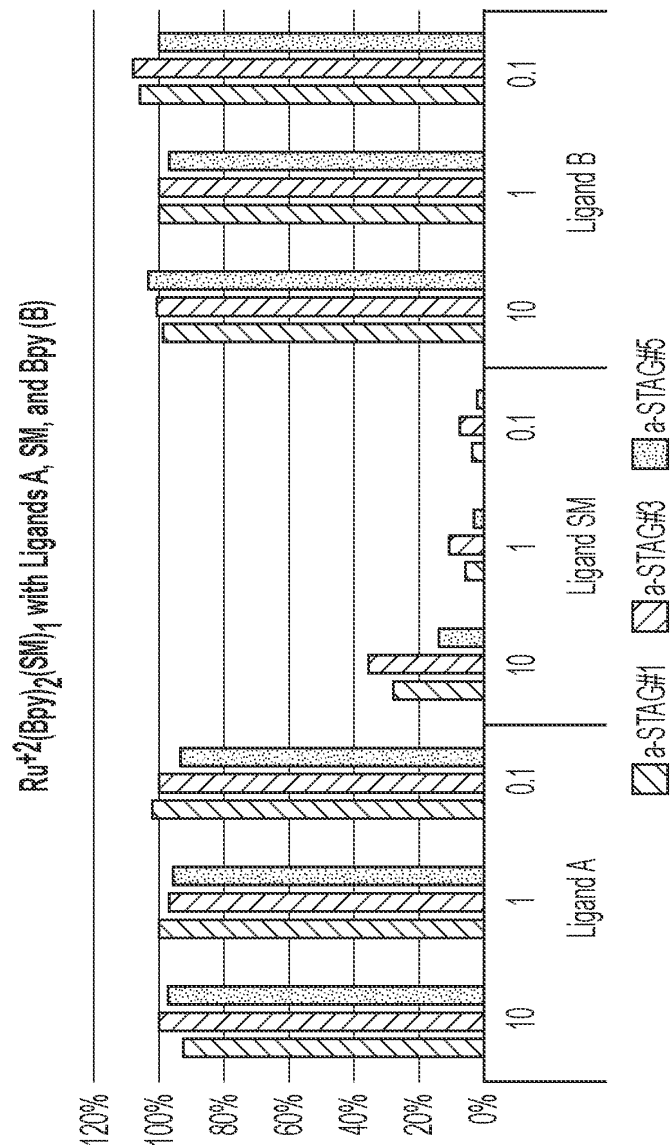


FIG. 20
(cont'd)

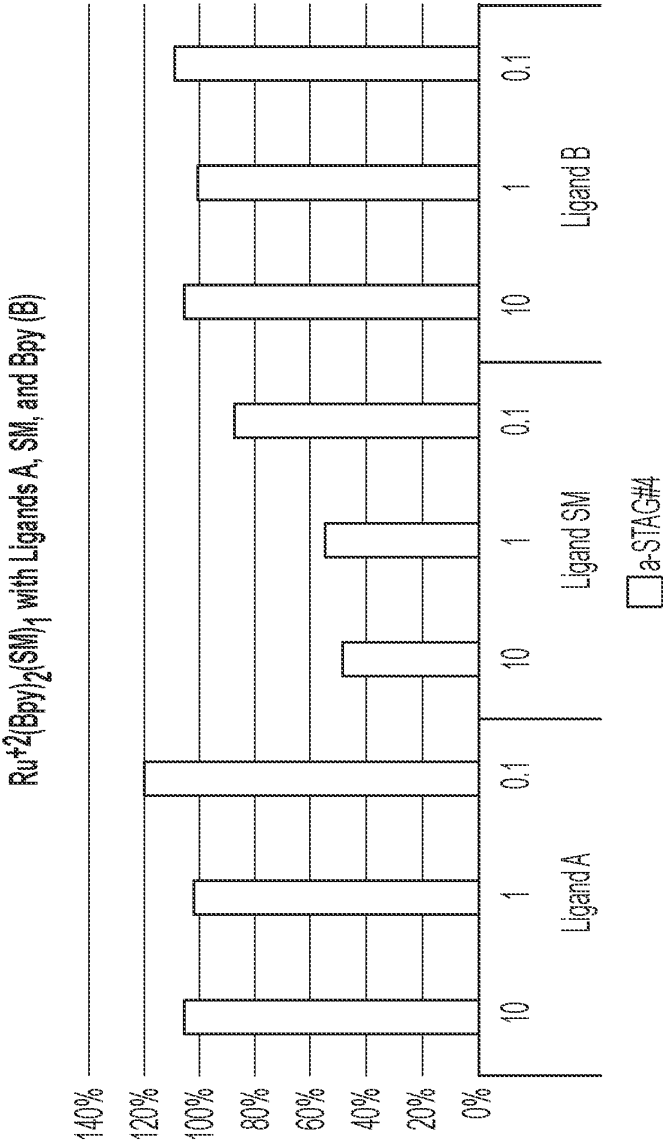


FIG. 20
(contd)

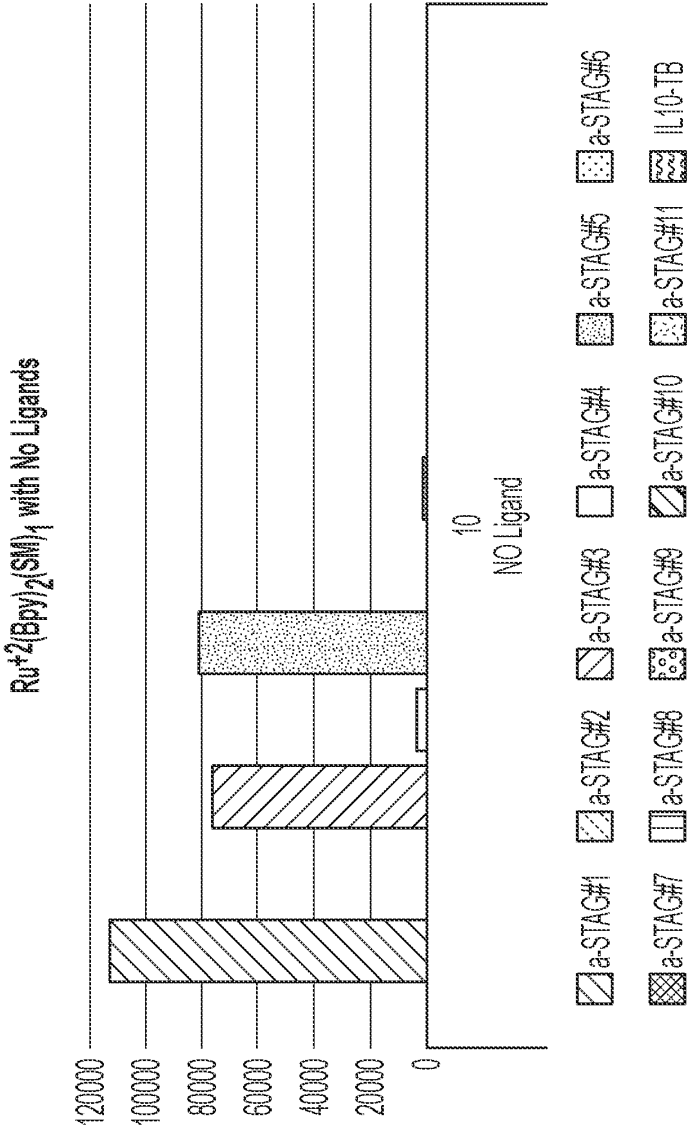


FIG. 20
(cont'd)

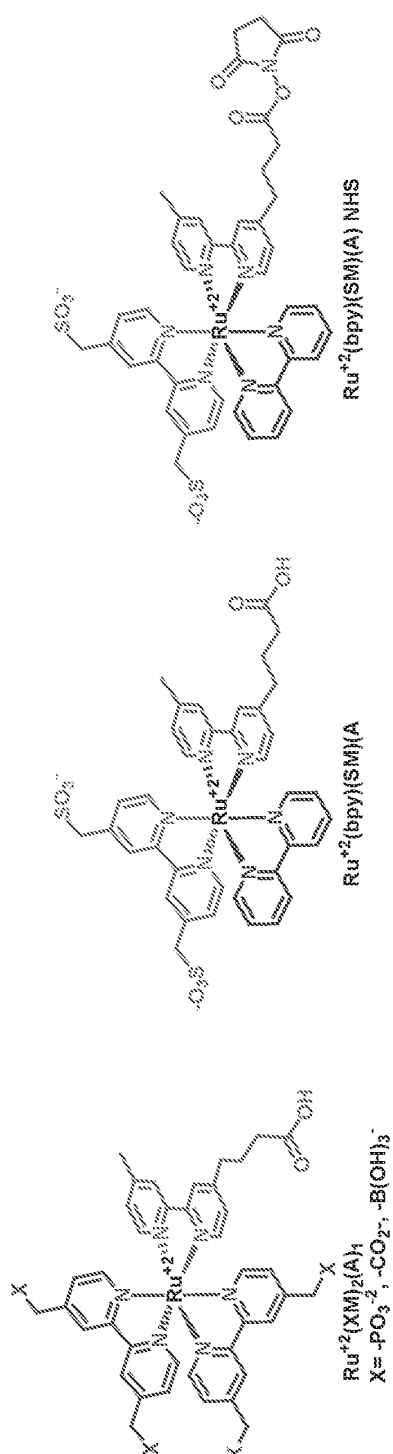


FIG. 21

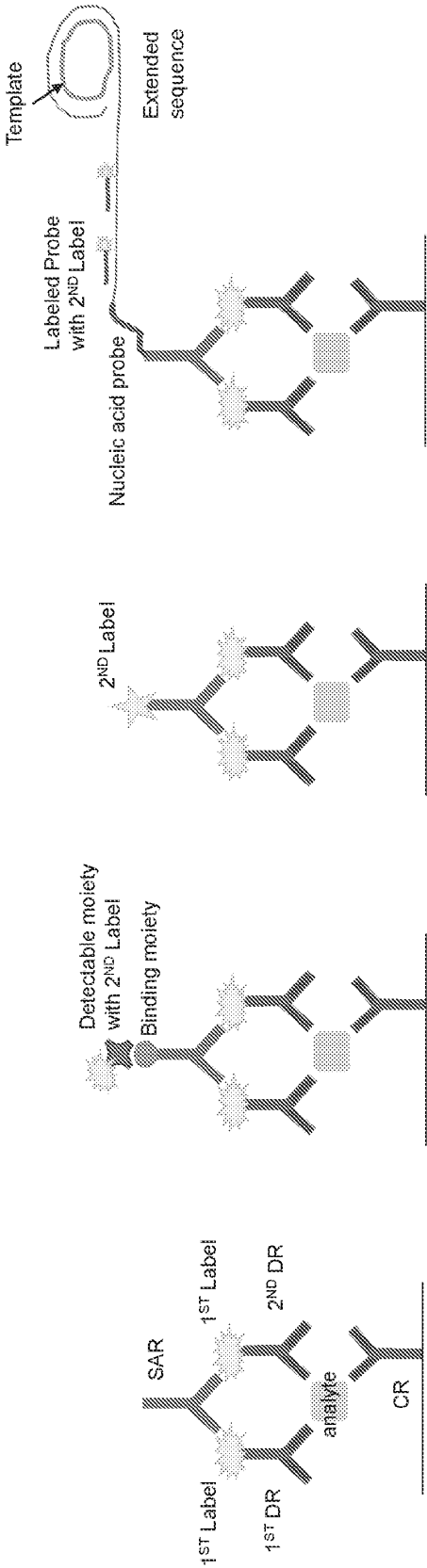


FIG. 22D

FIG. 22C

FIG. 22B

FIG. 22A