

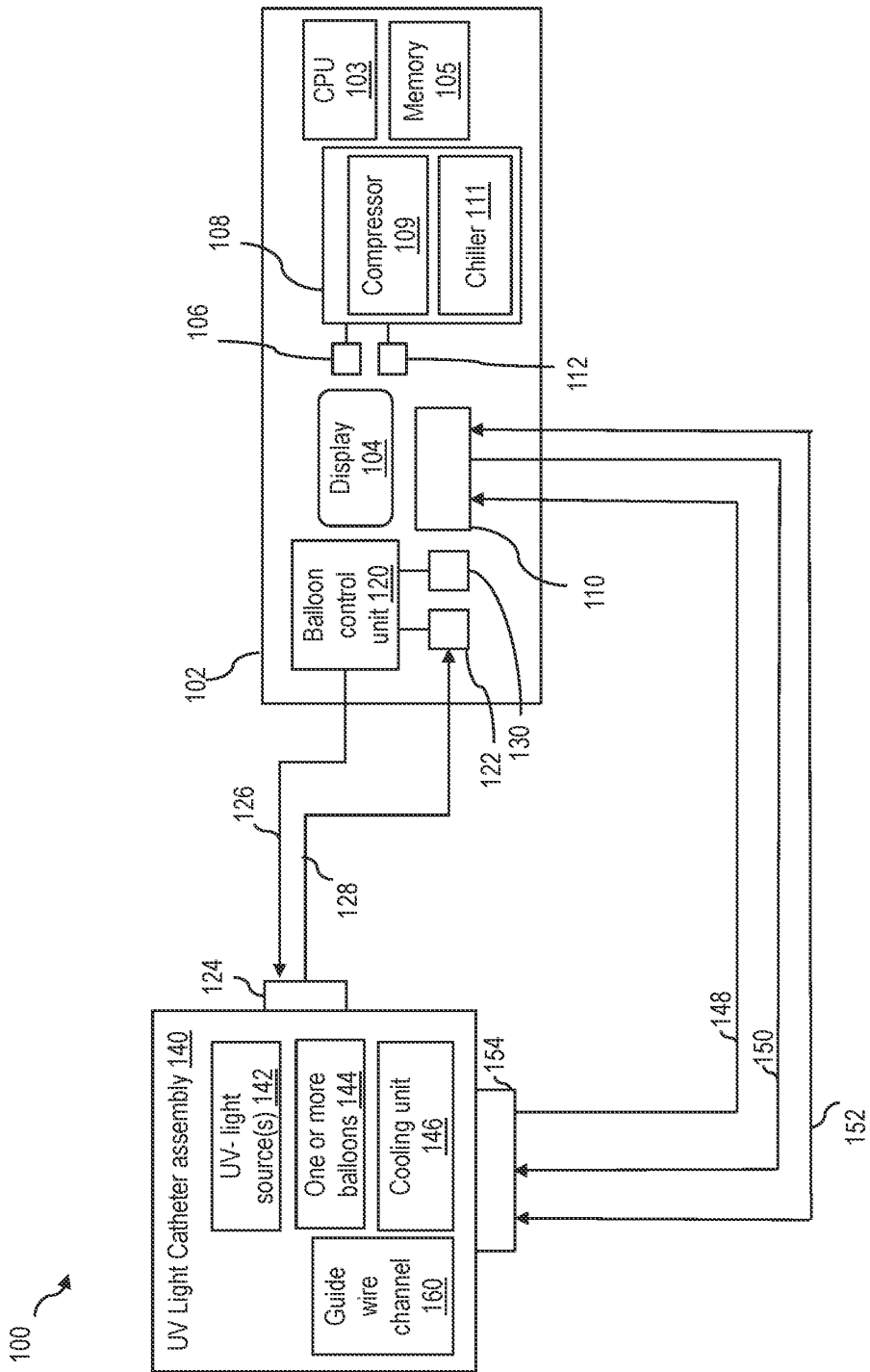


FIG. 1A

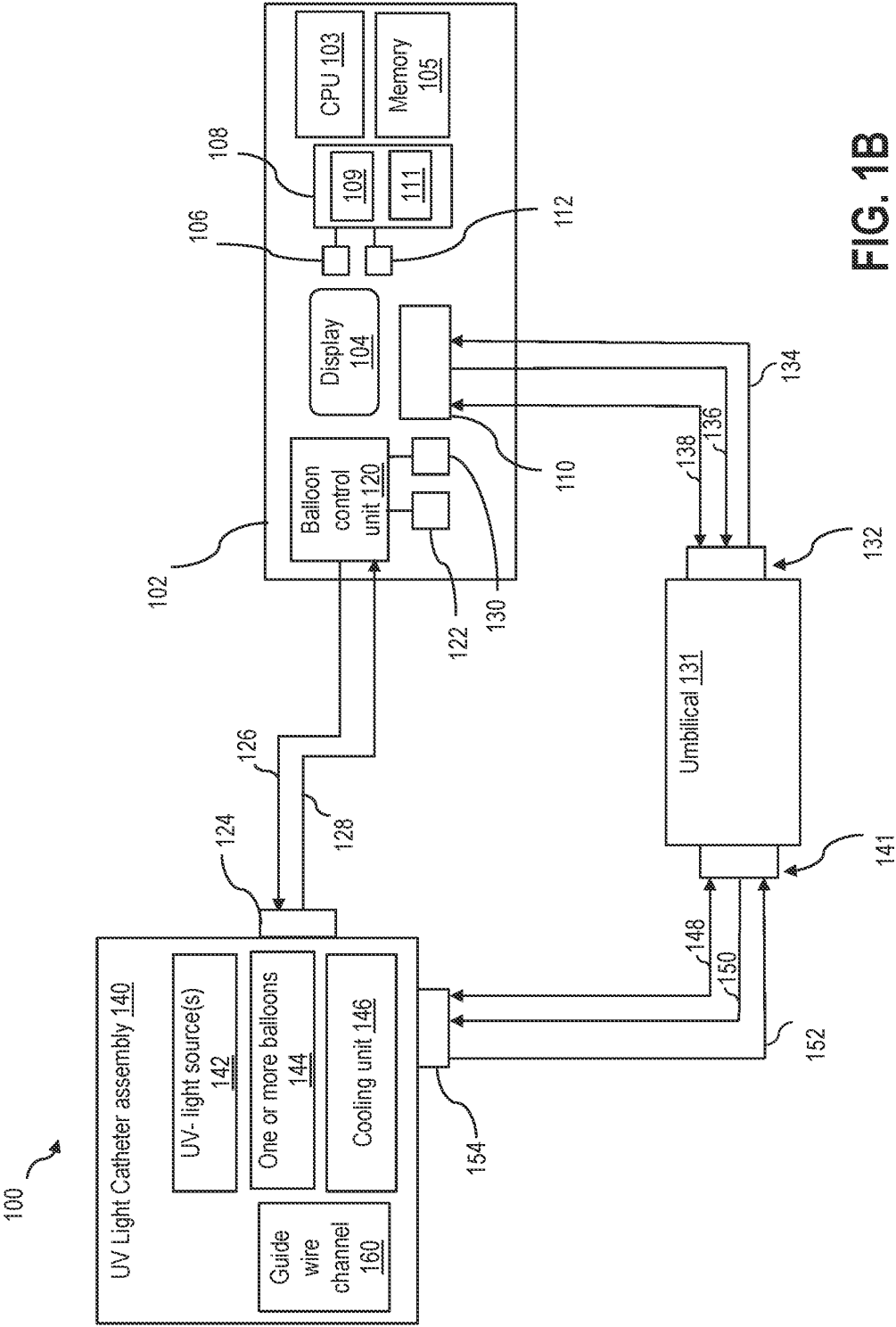


FIG. 1B

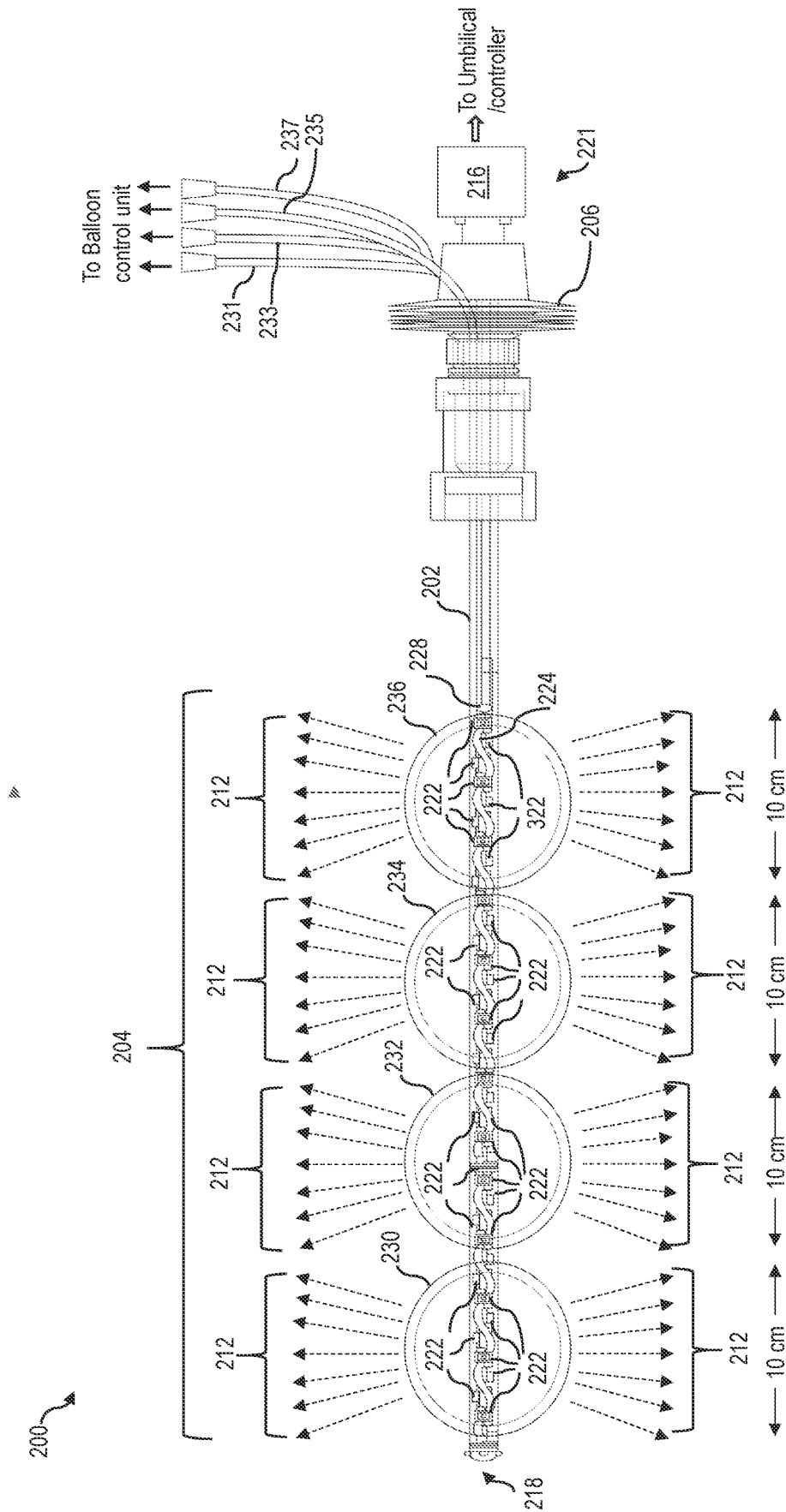


FIG. 2A

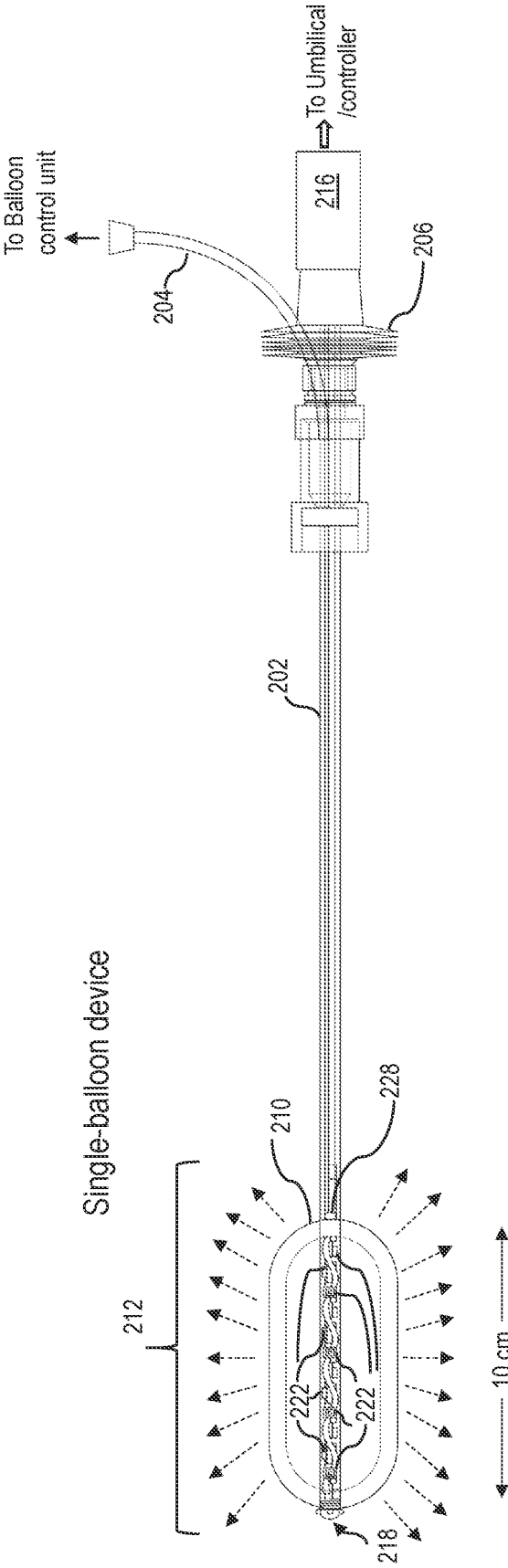
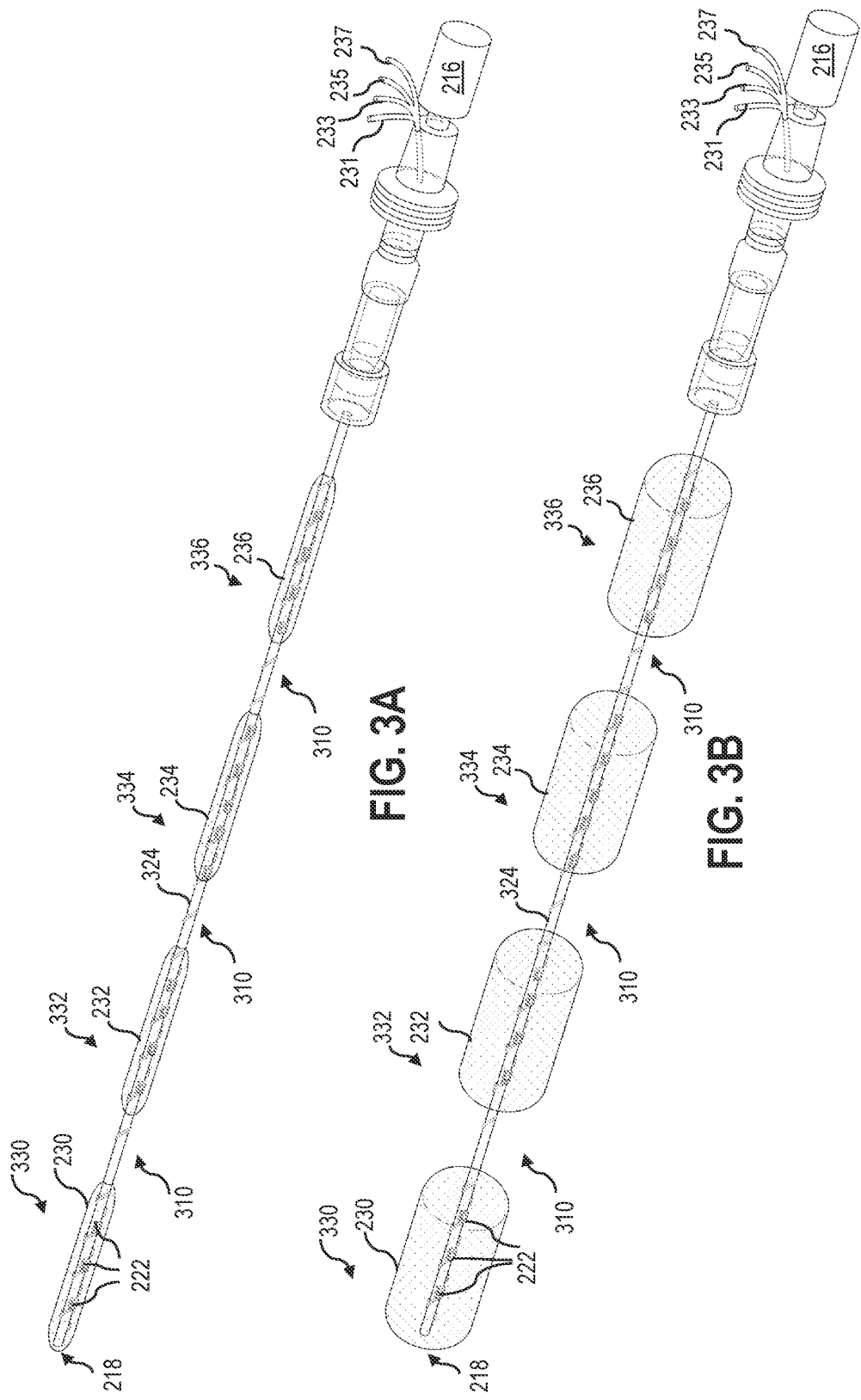
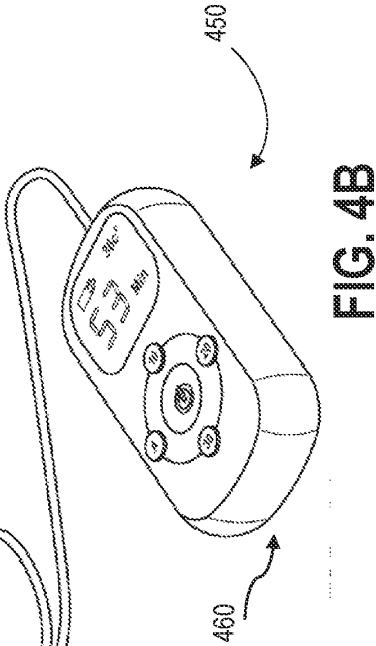
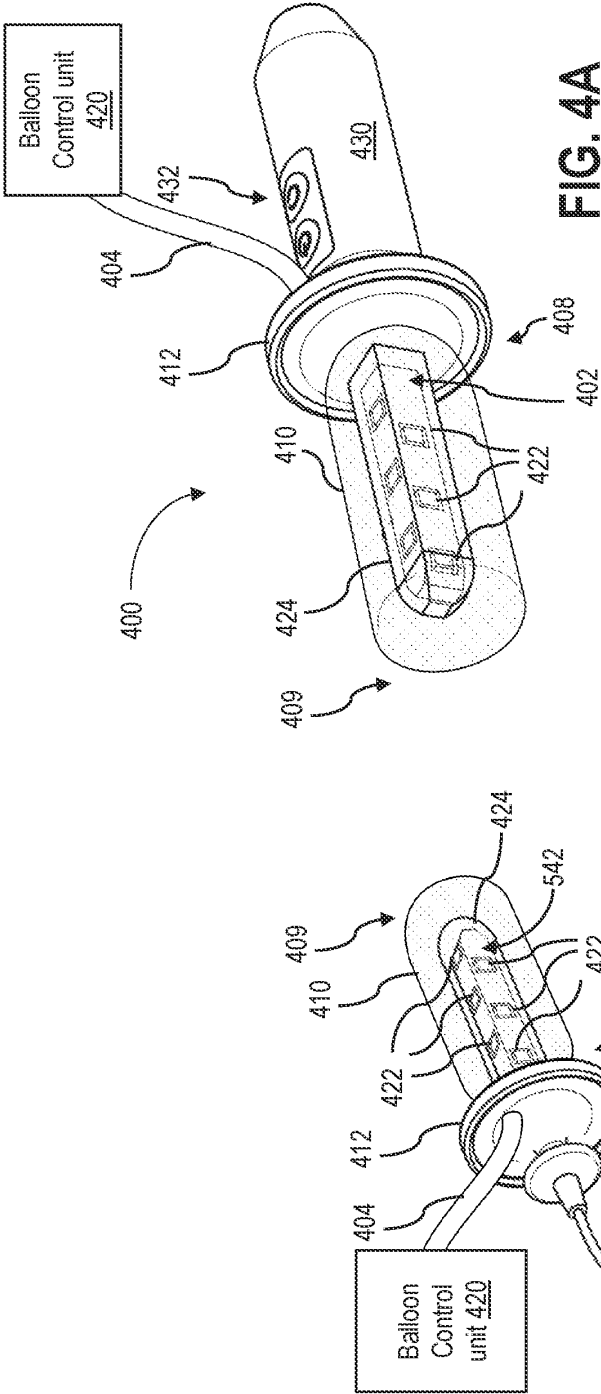


FIG. 2B





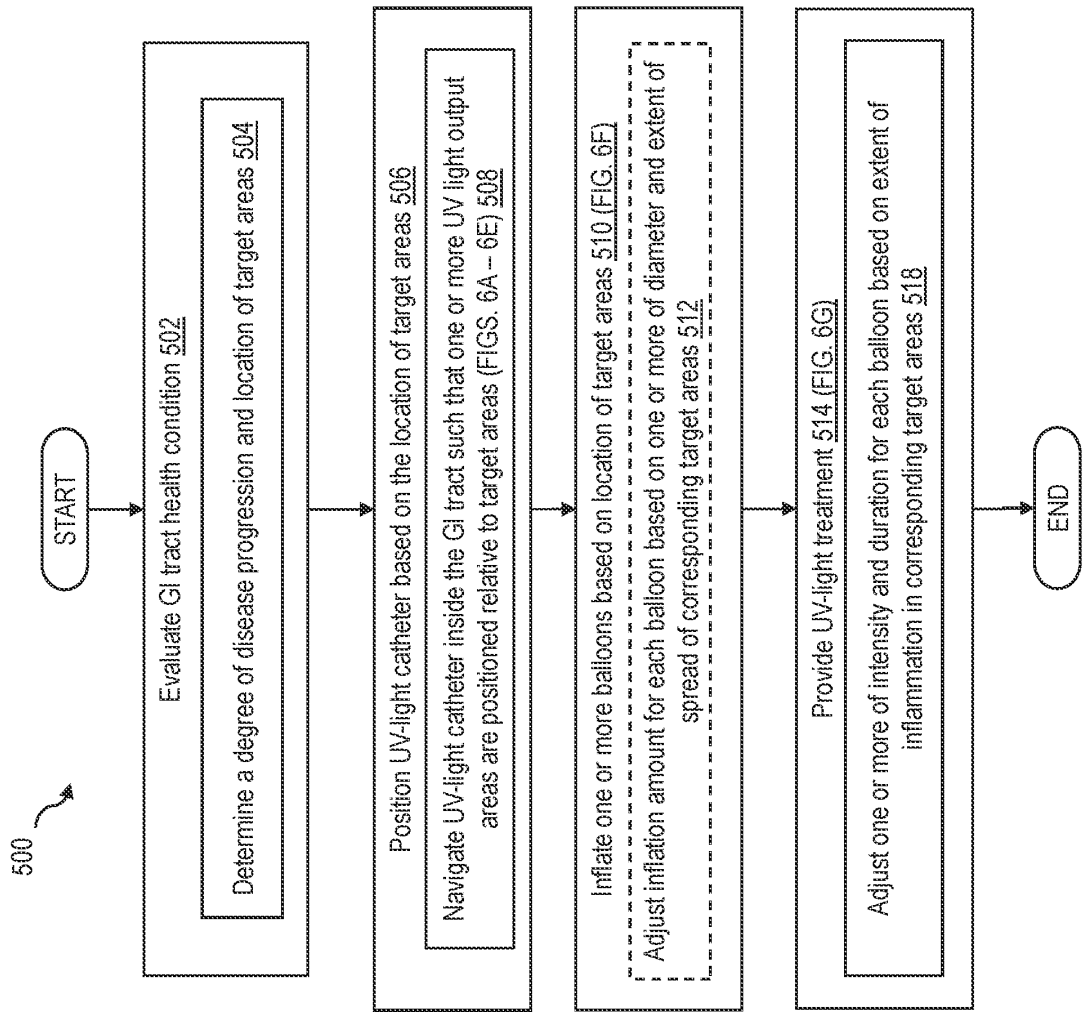


FIG. 5A

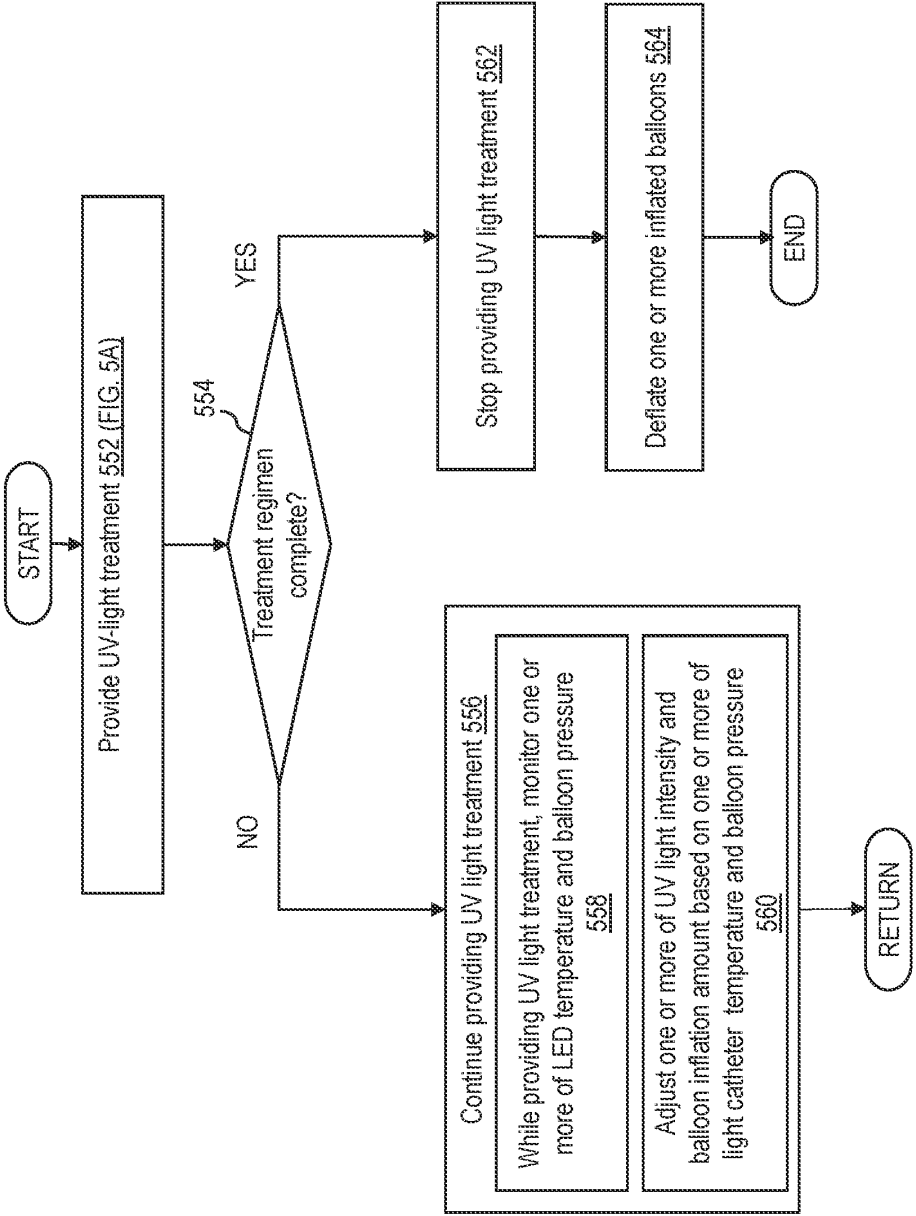


FIG. 5B

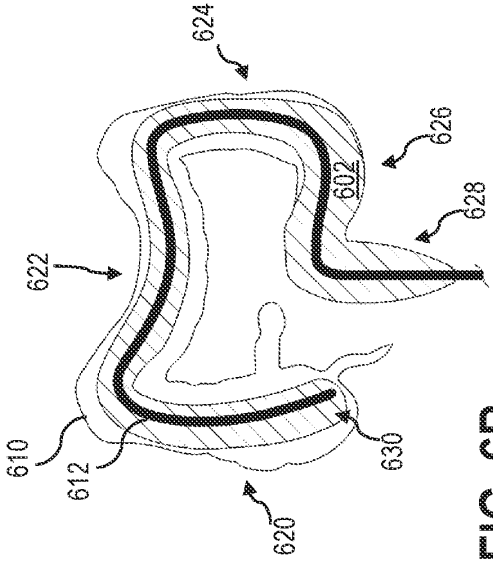


FIG. 6A

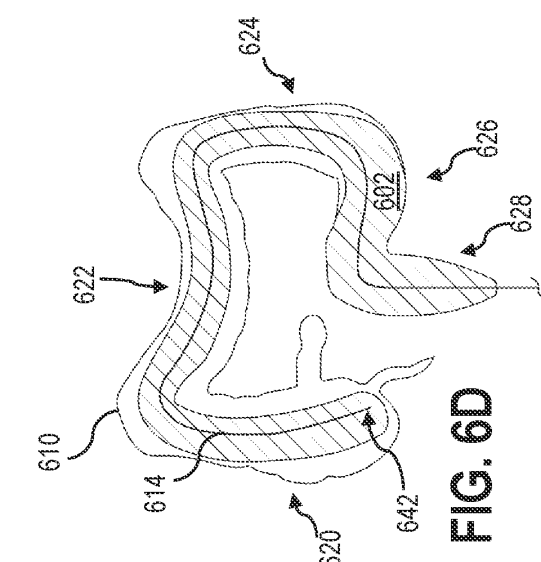


FIG. 6B

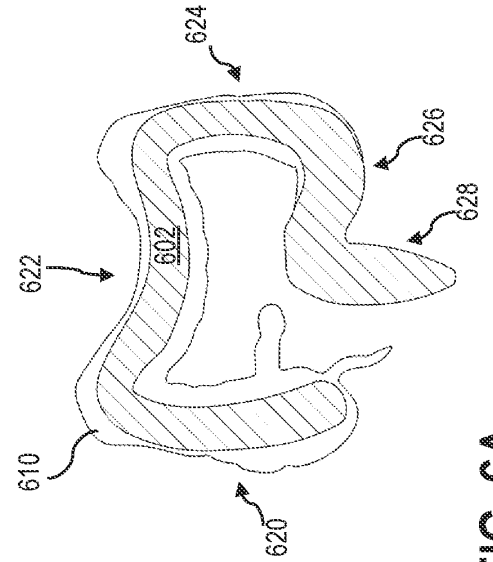


FIG. 6C

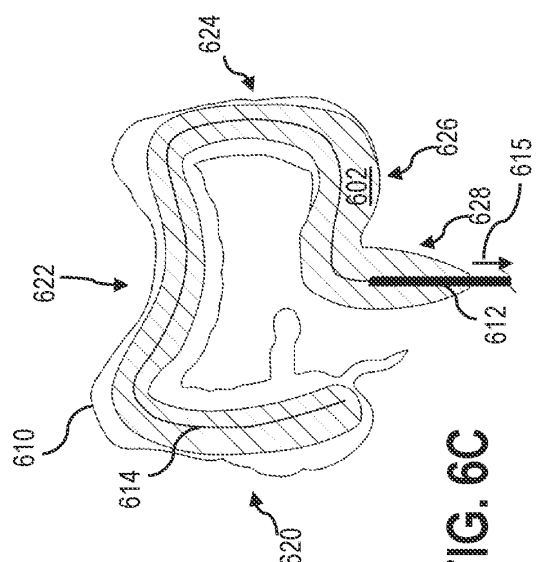


FIG. 6D

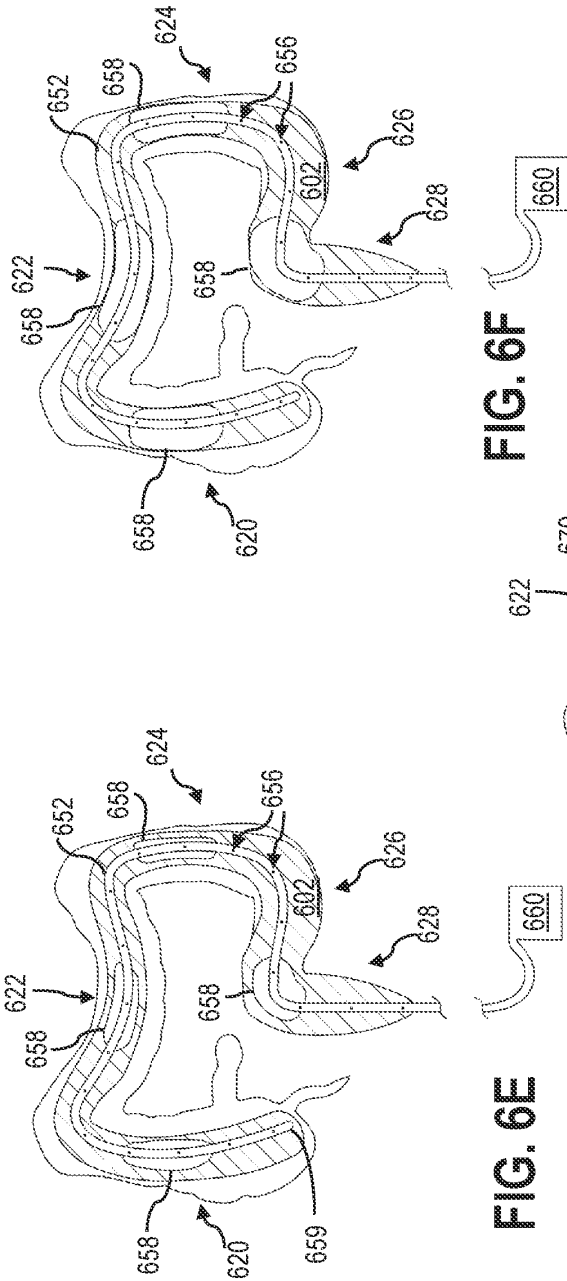


FIG. 6F

FIG. 6E

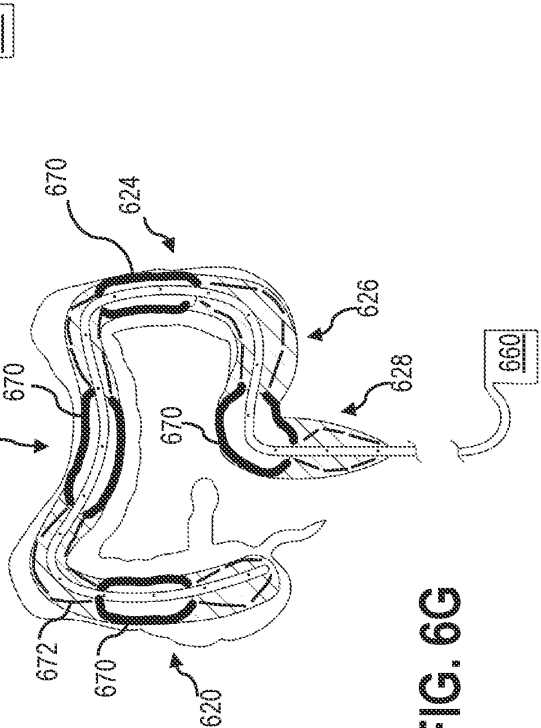
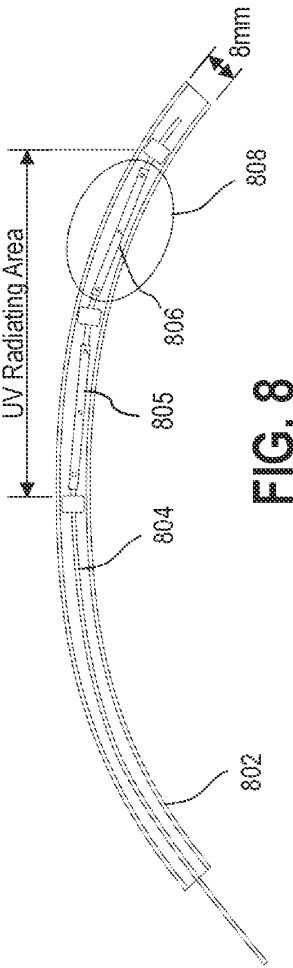
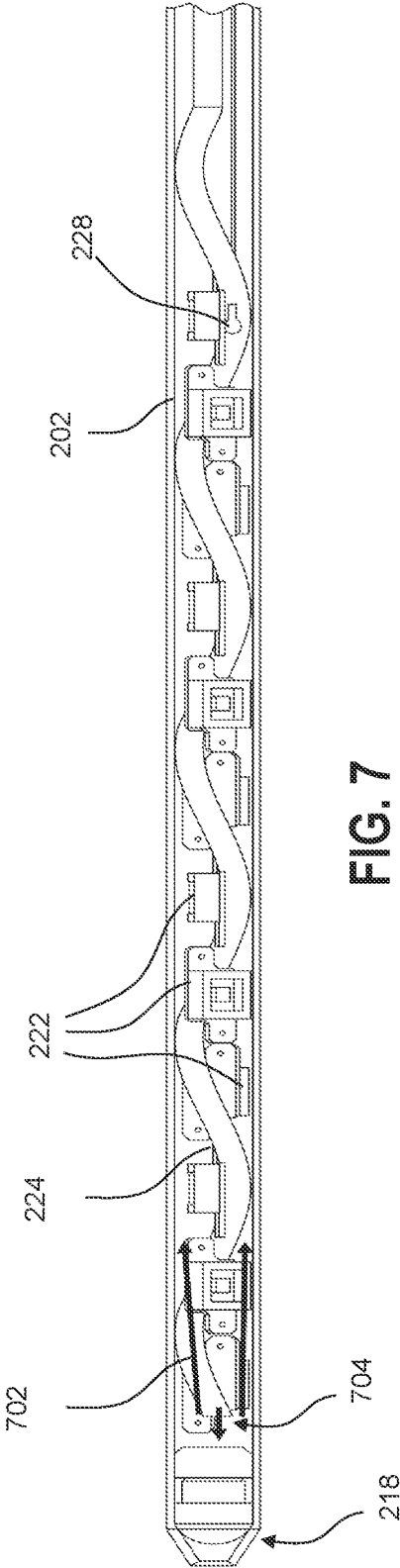
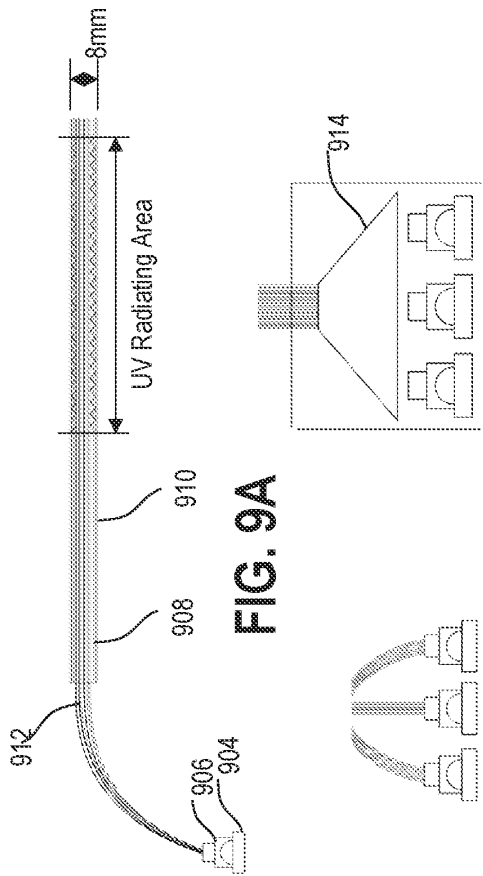


FIG. 6G





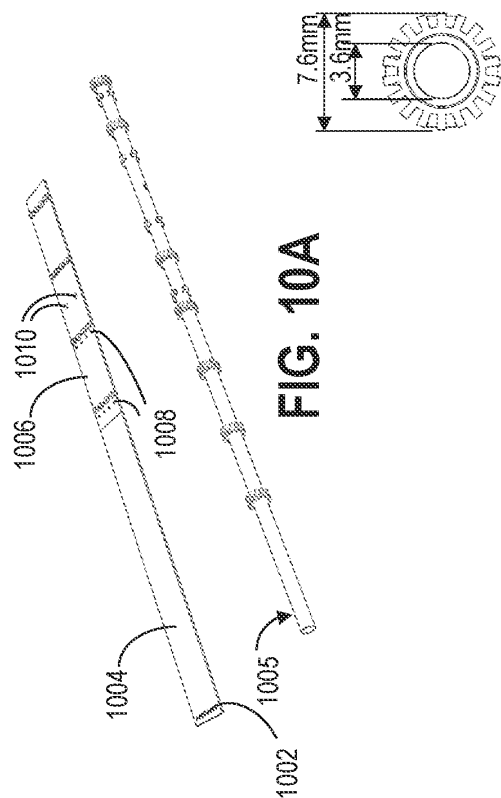


FIG. 10B

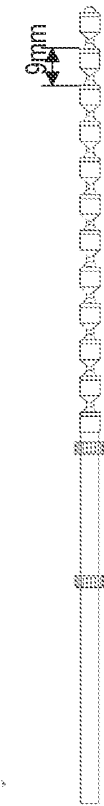


FIG. 11A

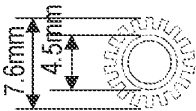


FIG. 11B

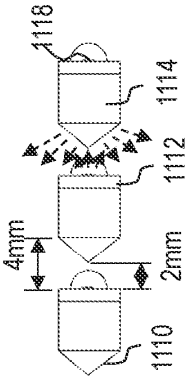


FIG. 11C

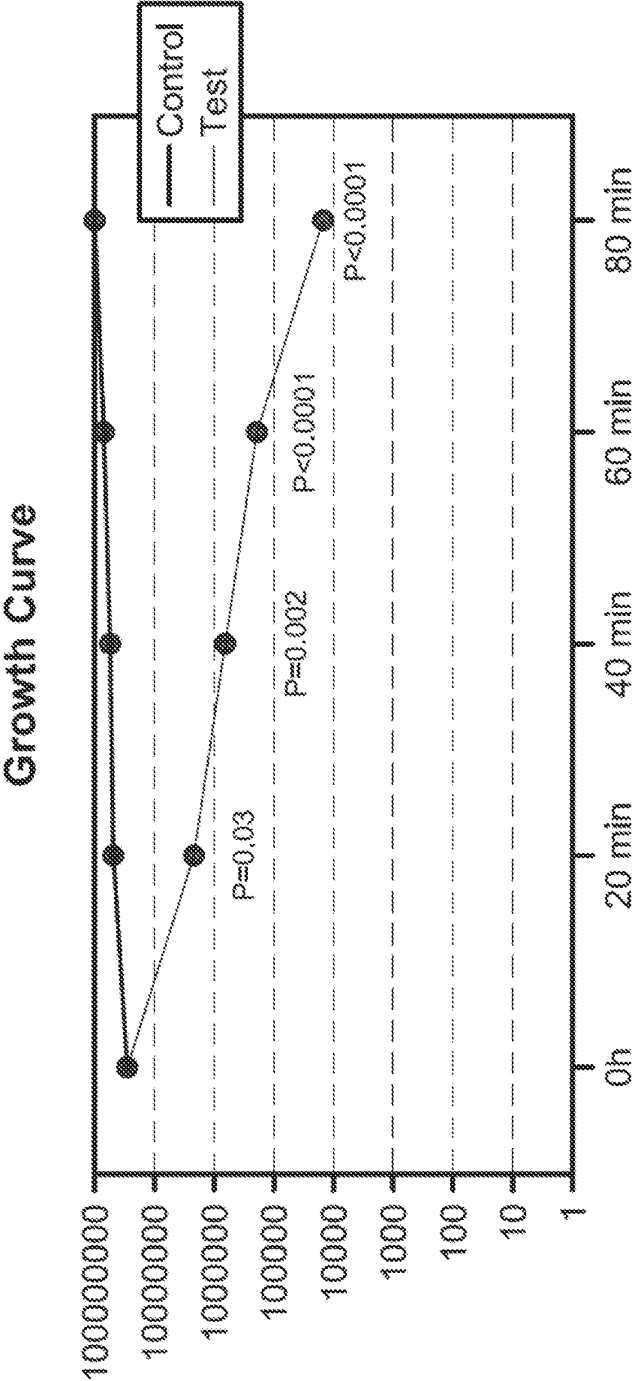


FIG. 12A

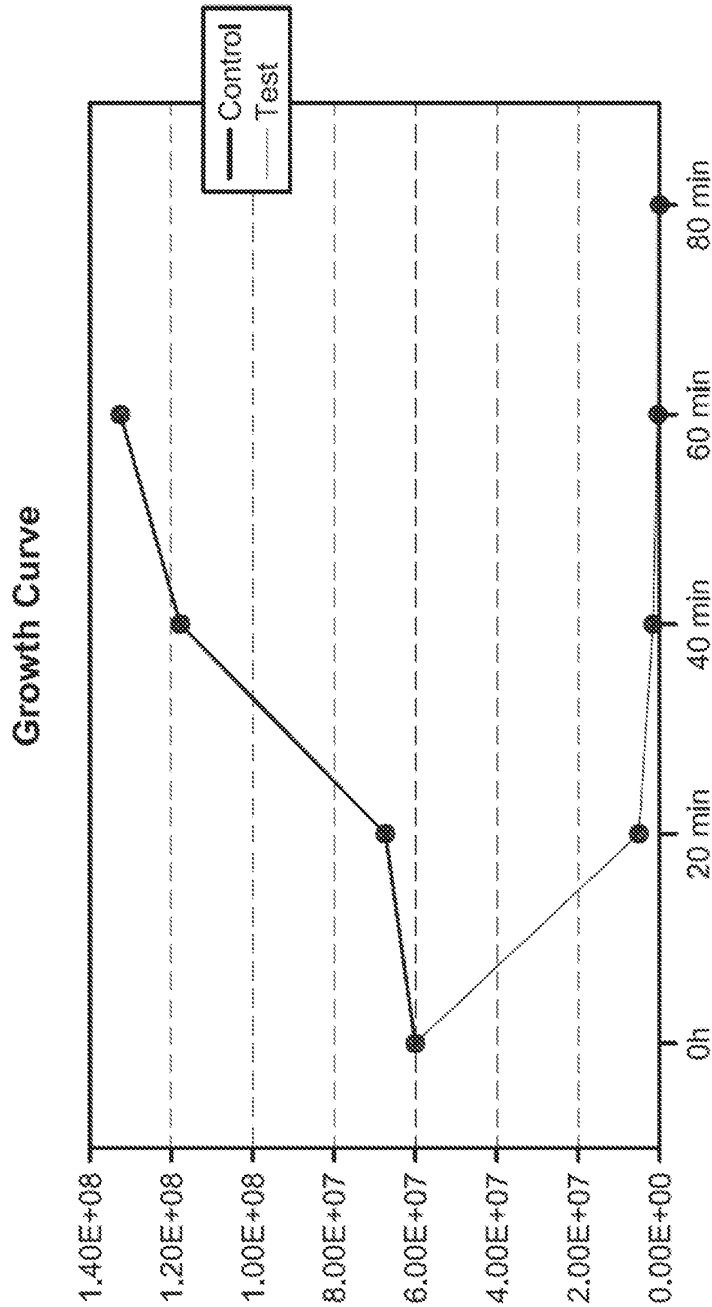


FIG. 12B

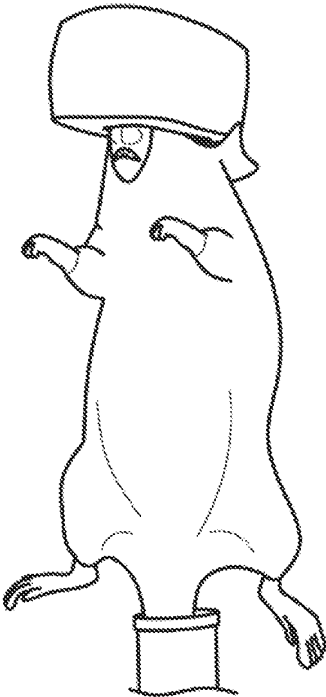


FIG. 13

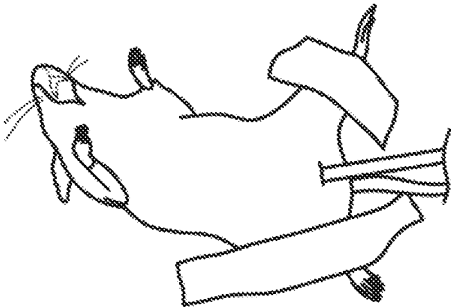


FIG. 14B

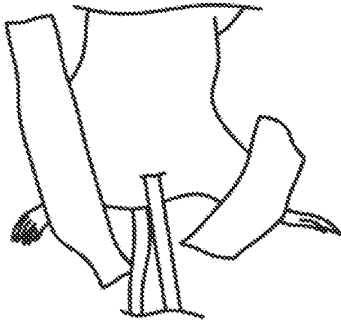


FIG. 14A

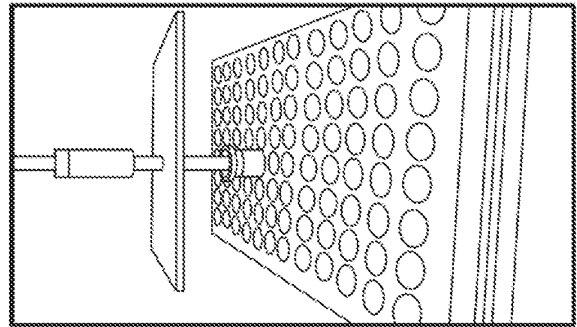


FIG. 15B

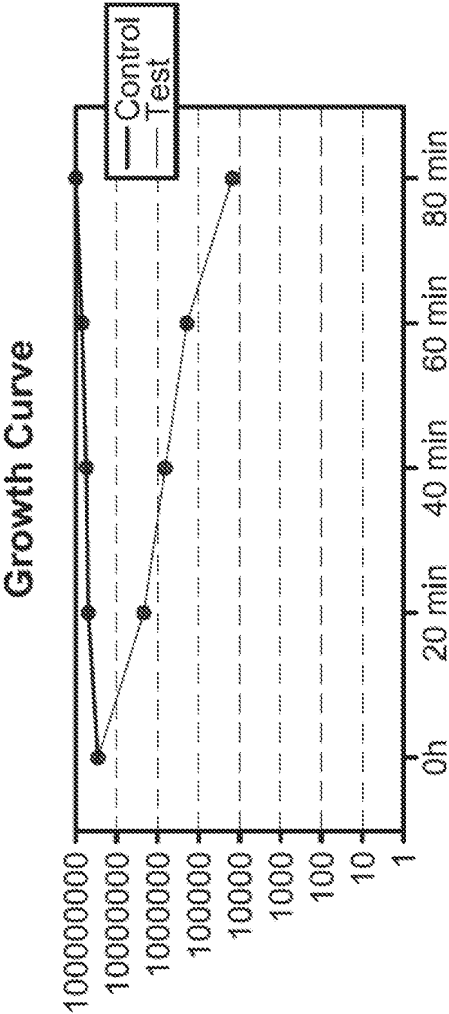


FIG. 15A

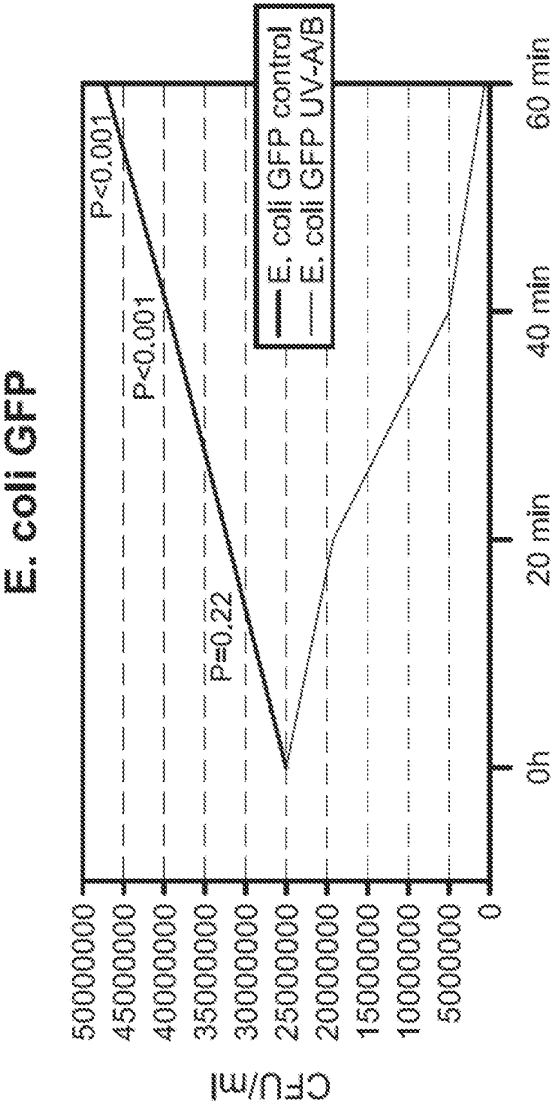


FIG. 16

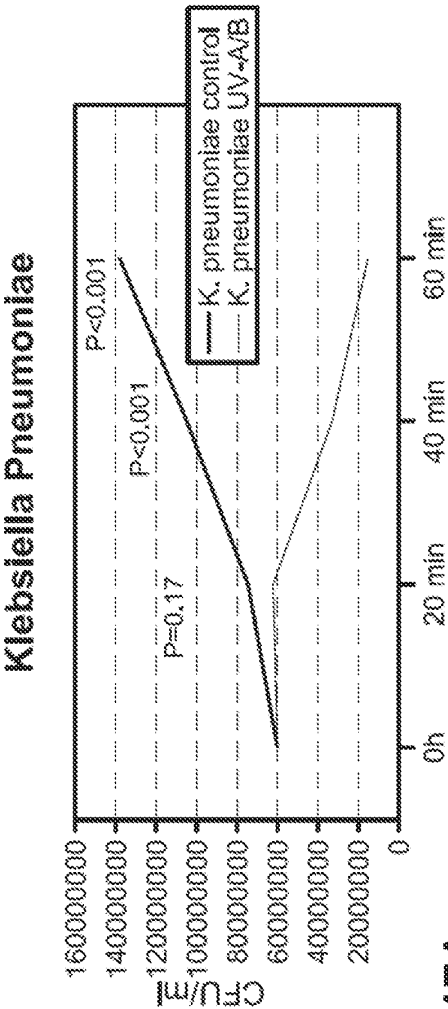


FIG. 17A

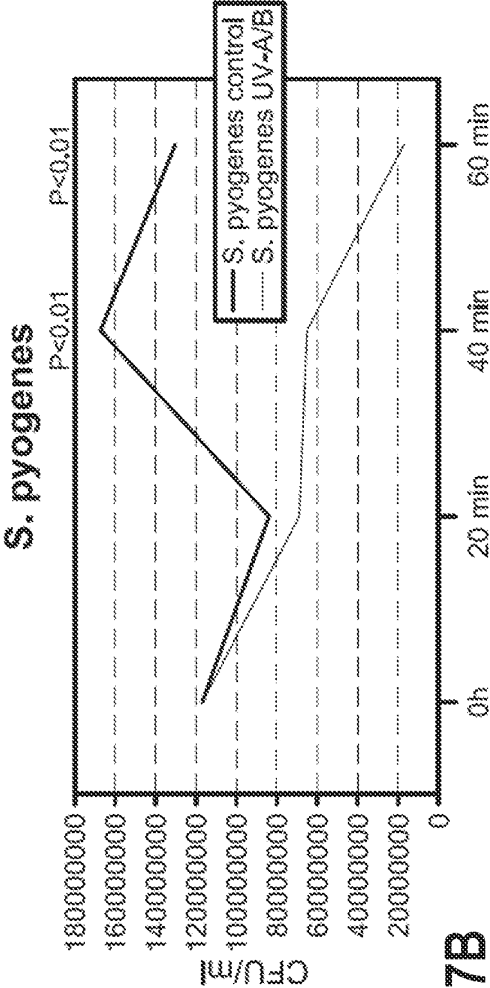


FIG. 17B

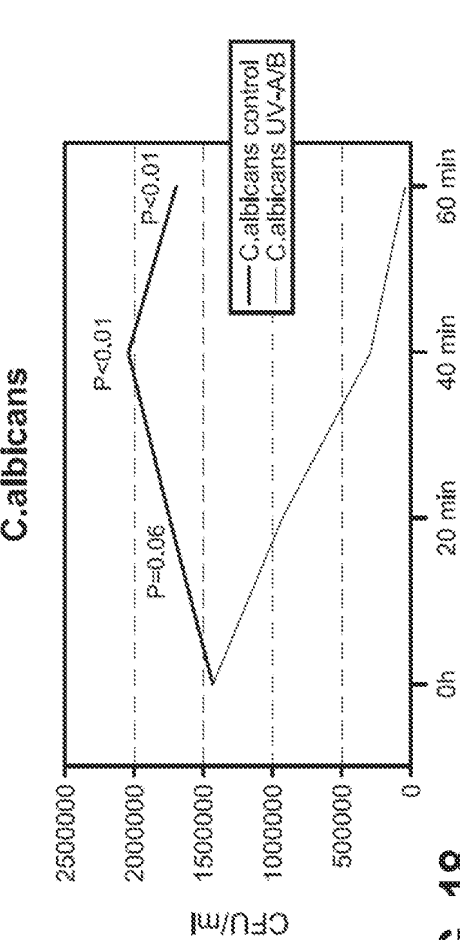


FIG. 18

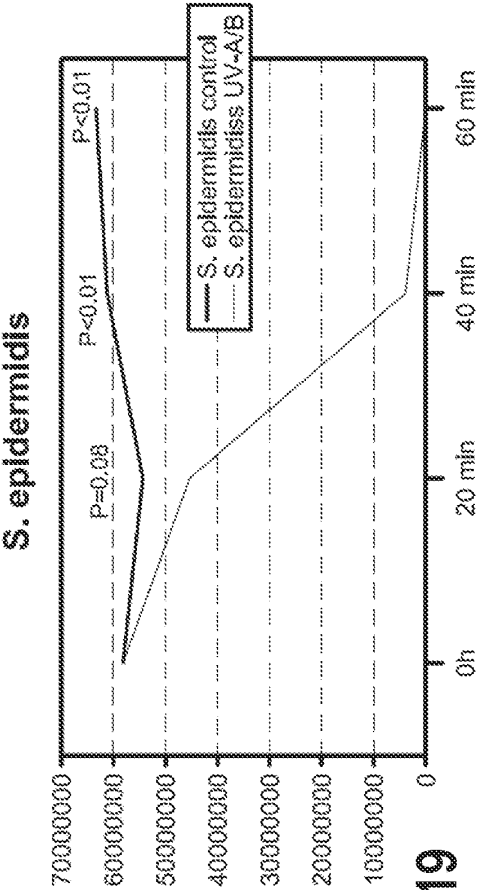


FIG. 19

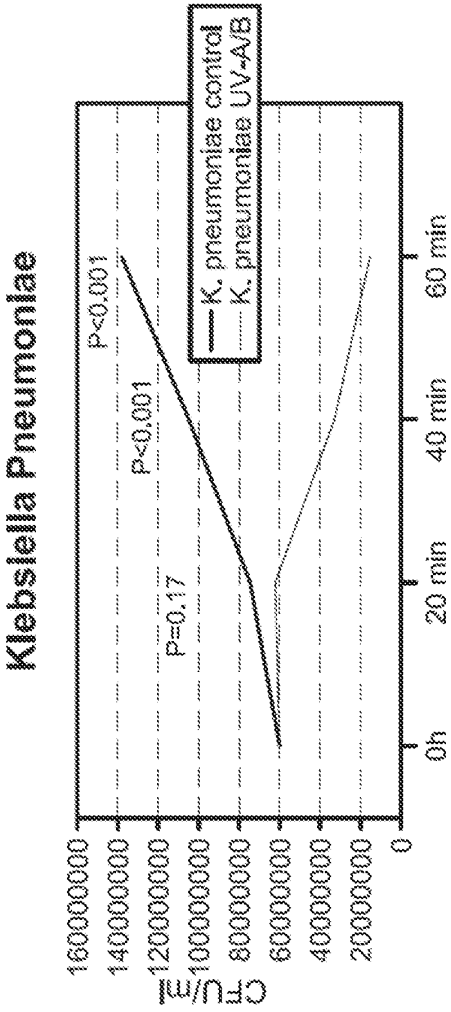


FIG. 20

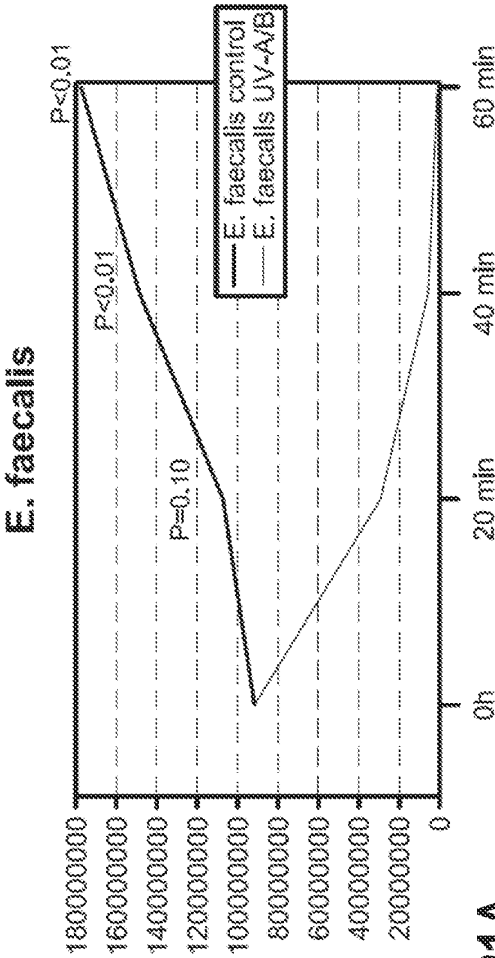


FIG. 21A

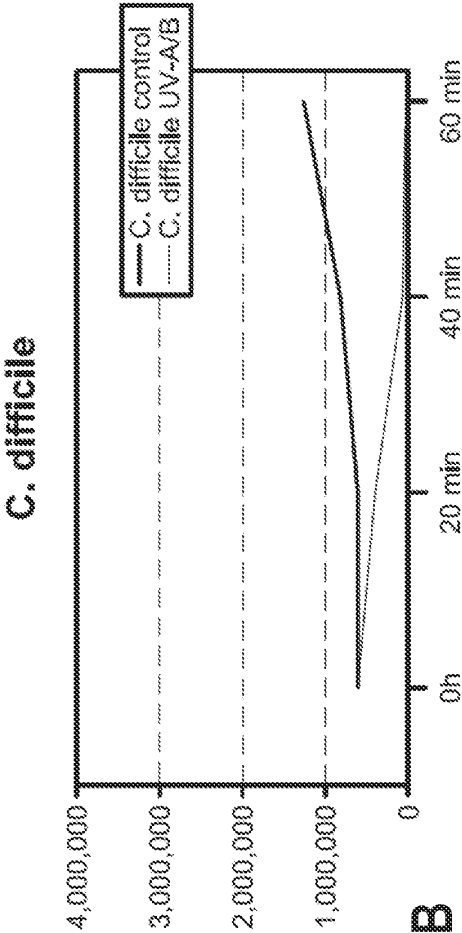


FIG. 21B

Microbial strains	Liquid broth	Solid Medium (agar-based plates)	Temperature of incubation °C	Atmosphere	Time of incubation Initial (hour)	Time of incubation prior UVA exposure (hour)	Intensity of UVA light ($\mu\text{W}/\text{cm}^2$)	Time of UVA exposure (minutes)
<i>Candida albicans</i> (Robin Berkhout ATCC® 10231™)	Sabouraud Dextrose	Sabouraud Dextrose	24 to 26	Aerobic	16 to 24	4 to 6	1700	20, 40 and 60
<i>Clostridioides difficile</i> (Prevot) Lawson et al. ATCC® 700057™	Brain Heart Infusion	Reinforced Clostridial	36 to 37	Anaerobic	24 to 48	6 to 8	2000	20, 40 and 60
<i>Enterococcus faecalis</i> ATCC® 29212™	Brain Heart Infusion	Trypticase Soy Agar with 5% Sheep Blood	36 to 37	Aerobic	18 to 24	4 to 6	2400	20, 40 and 60
<i>Escherichia coli</i> GFP ATCC® 25922 GFP™	Luria Bertani	Luria Bertani	36 to 37	Aerobic	16 to 24	2 to 3	1300	20, 40 and 60
<i>Escherichia coli</i> - clinical isolate	Luria Bertani	Luria Bertani	36 to 37	Aerobic	16 to 24	2 to 3	1100 to 1300	20, 40, 60, and 80
<i>Klebsiella pneumoniae</i> ATCC® BAA-1705™	Luria Bertani	Luria Bertani	36 to 37	Aerobic	16 to 24	2 to 3	1300	20, 40 and 60
<i>Proteus mirabilis</i> ATCC® 29906™	Luria Bertani	Hectoen Enteric	36 to 37	Aerobic	16 to 24	2 to 3	2400	20, 40 and 60
<i>Pseudomonas aeruginosa</i> ATCC® 15442™	Luria Bertani	Luria Bertani	36 to 37	Aerobic	16 to 24	2 to 3	3500	20, 40 and 60
<i>Staphylococcus epidermidis</i> (Winslow and Winslow) Evans ATCC® 14990™	Tryptic Soy Broth	Trypticase Soy Agar with 5% Sheep Blood	36 to 37	Aerobic	24 to 48	3 to 5	2150	20, 40 and 60
<i>Streptococcus pyogenes</i> Rosenbach ATCC® 19615™	Tryptic Soy Broth	Trypticase Soy Agar with 5% Sheep Blood	36 to 37	Anaerobic	24 to 48	3 to 5	1800	20, 40 and 60

FIG. 22

FIG. 23

Microorganism	UVA intensity ($\mu\text{W}/\text{cm}^2$)	Group	Baseline CFUx10 ⁷ /mL	20 min CFU X 10 ⁷ /mL	P value	40 min CFU X 10 ⁷ /mL	P value	60 min CFU X 10 ⁷ /mL	P Value
<i>Clostridioides difficile</i>	2,000	Exposed	0.1	0.08	0.01	0.01	0.003	0.0031	0.01
		Control	0.1	0.13		0.17		0.39	
<i>Candida albicans</i>	1,700	Exposed	0.14	0.09	0.007	0.03	0.001	0.032	0.001
		Control	0.14	0.17		0.2		0.16	
<i>Pseudomonas aeruginosa</i>	3,500	Exposed	0.81	0.07	<0.001	No growth	<0.001	No growth	<0.001
		Control	0.81	0.61		0.93		0.85	
<i>Klebsiella pneumoniae</i>	1,300	Exposed	5.9	6.34	0.17	3.34	<0.001	1.53	<0.001
		Control	5.9	7.49		10.5		13.81	
<i>Escherichia coli</i>	1,300	Exposed	1.25	0.41	<0.001	0.21	0.001	0.03	<0.001
		Control	1.25	3.31		4.2		5.52	
<i>Enterococcus faecalis</i>	2,400	Exposed	9.21	2.99	0.1	0.61	0.01	0.08	0.01
		Control	9.21	10.6		14.72		17.74	
<i>Streptococcus pyogenes</i>	1,800	Exposed	1.17	0.68	0.64	0.64	0.001	0.17	0.004
		Control	1.17	0.83		1.68		1.31	
<i>Proteus mirabilis</i>	2,400	Exposed	0.62	No growth	<0.001	No growth	<0.001	No growth	<0.001
		Control	0.62	0.59		0.49		0.54	
<i>Staphylococcus epidermidis</i>	2,150	Exposed	0.57	0.43	0.01	0.03	<0.001	0.000117	<0.001
		Control	0.57	0.59		0.69		0.7	

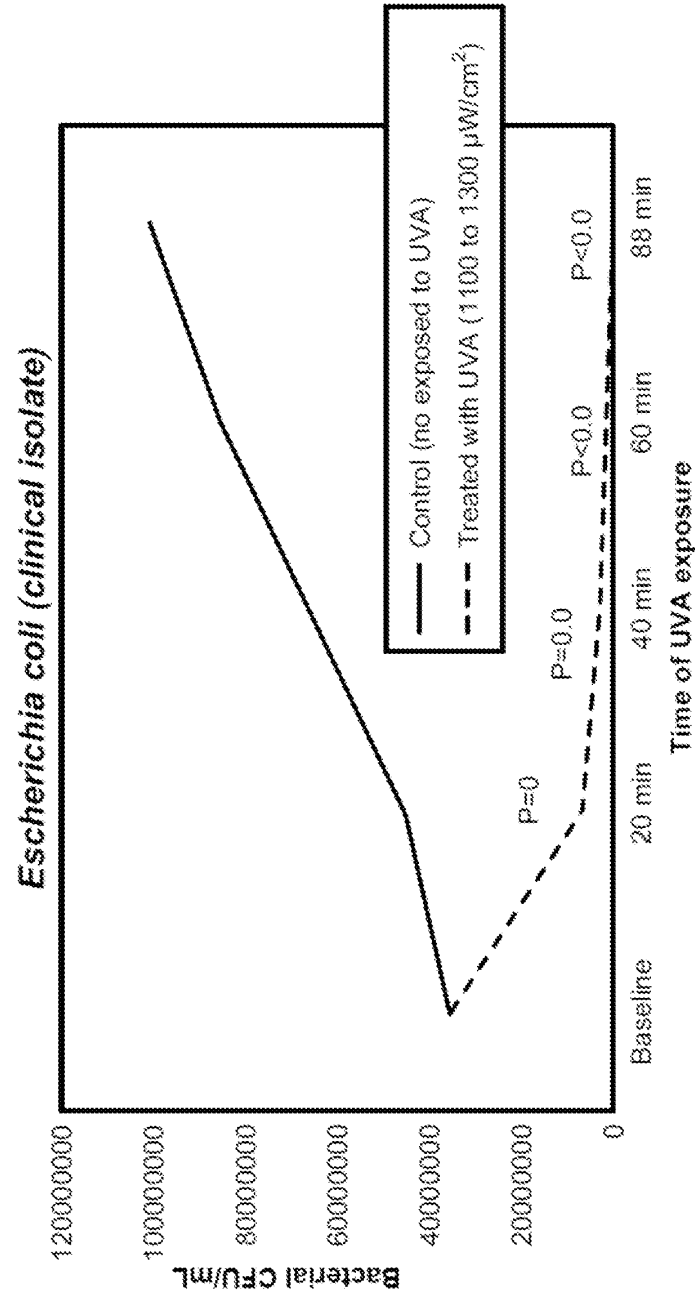


FIG. 24

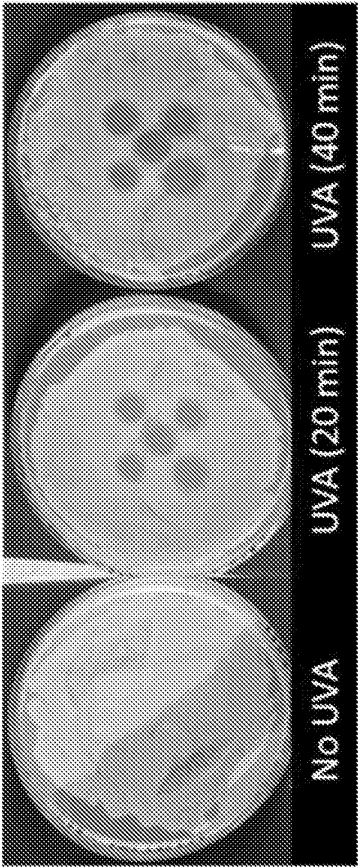


FIG. 25A

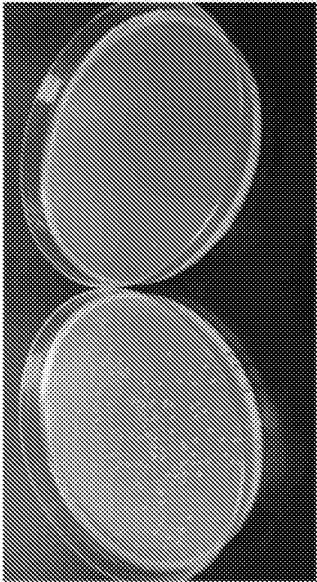


FIG. 25B

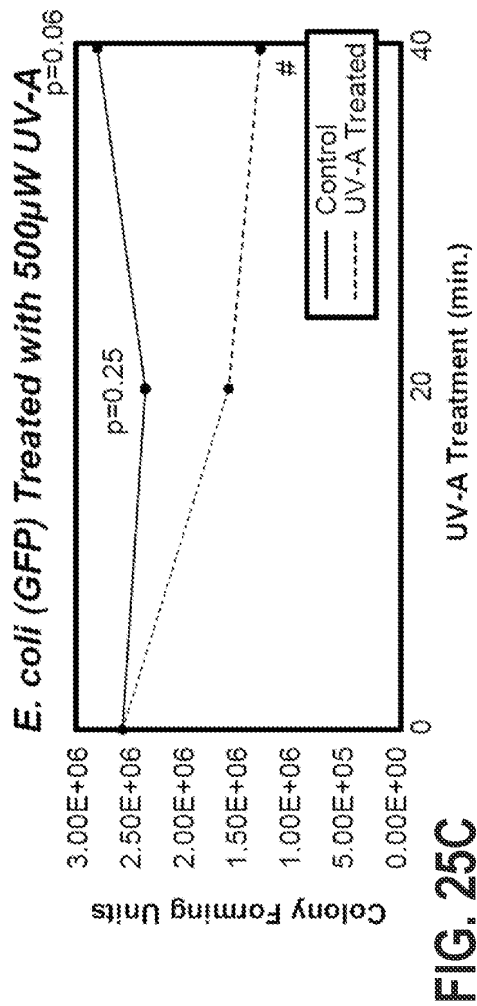


FIG. 25C

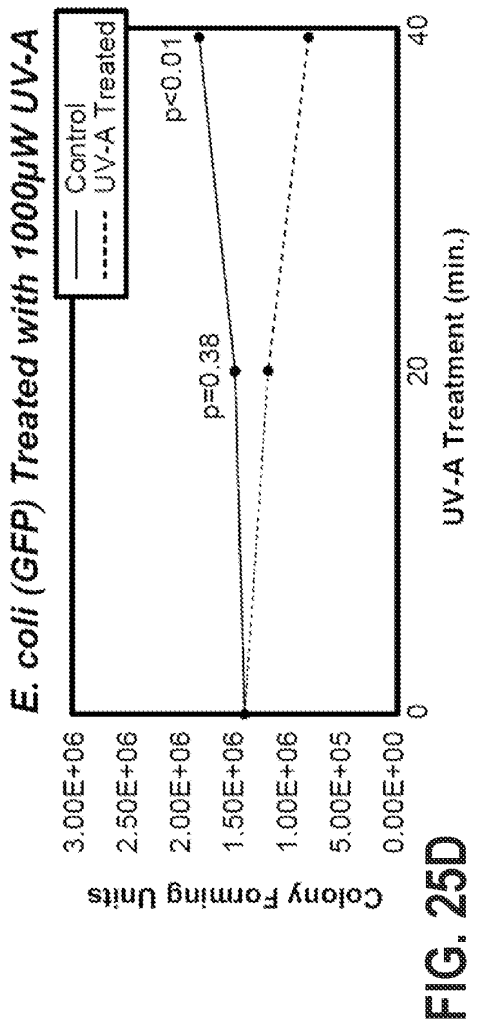
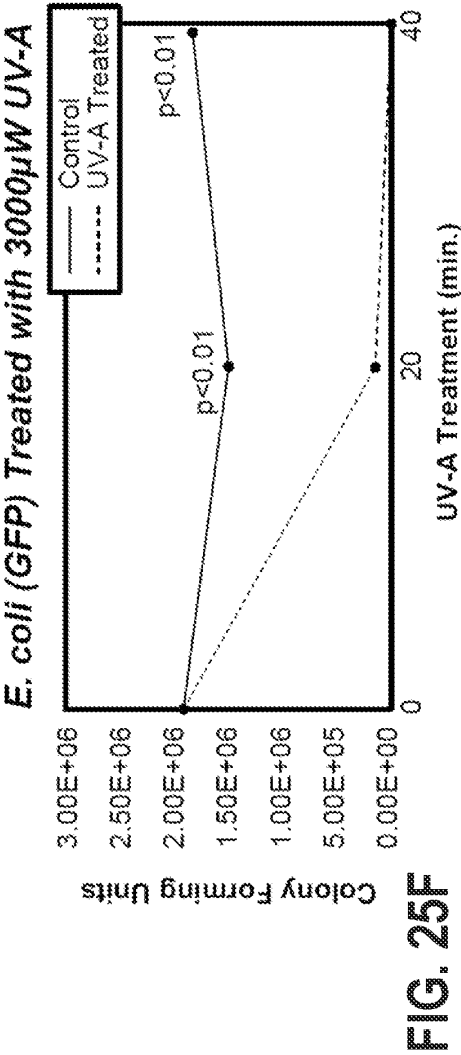
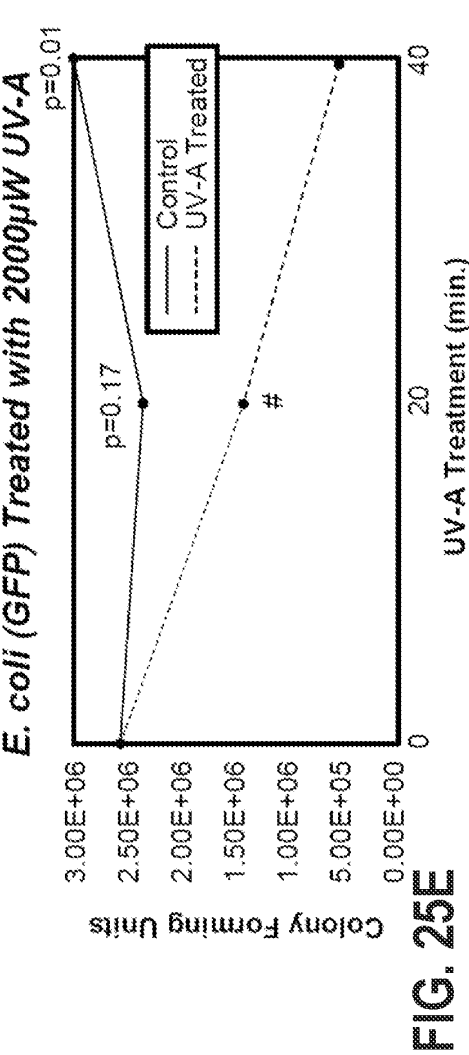
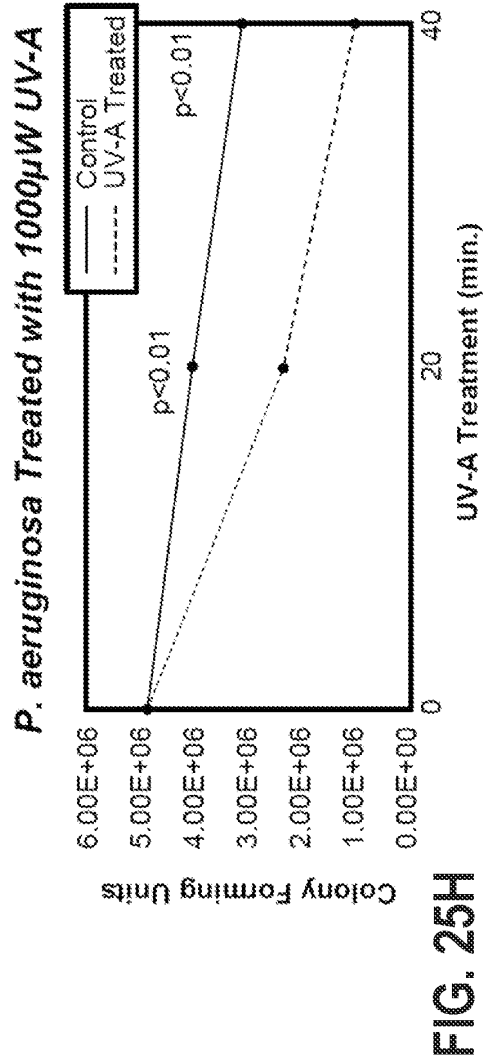
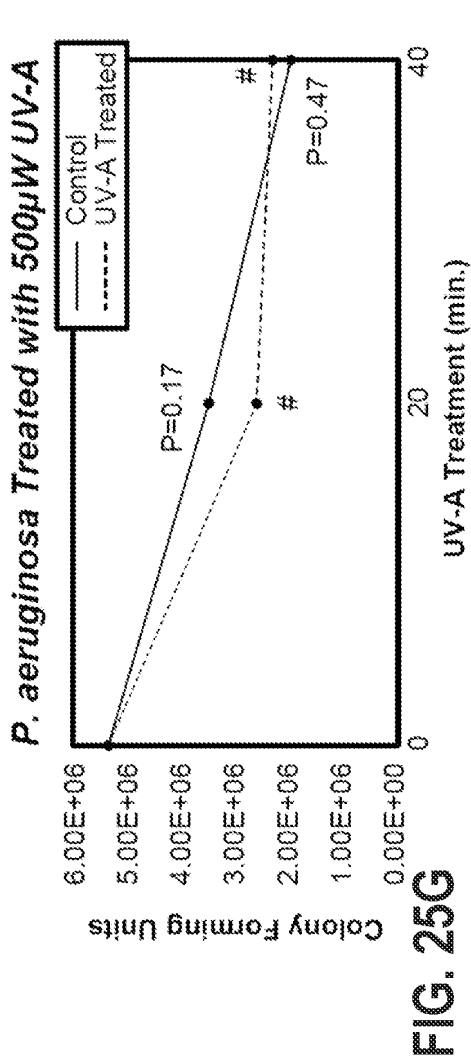
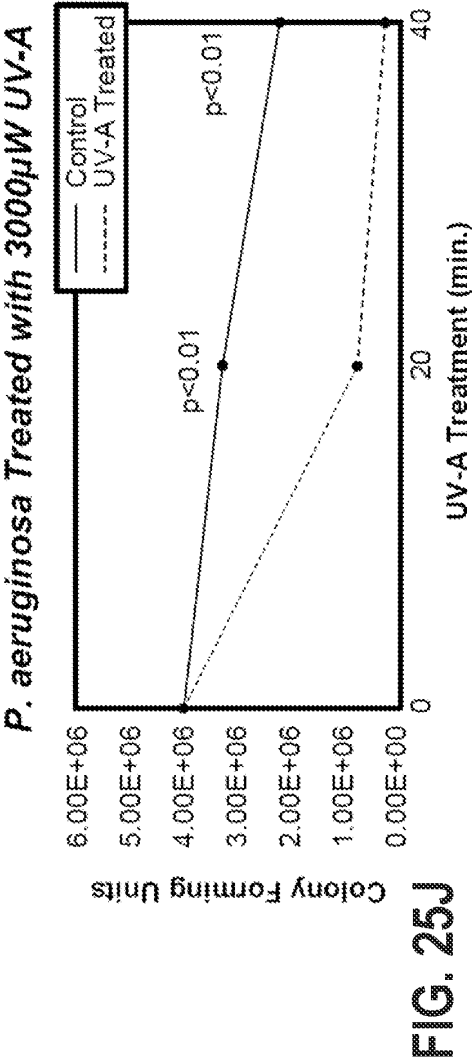
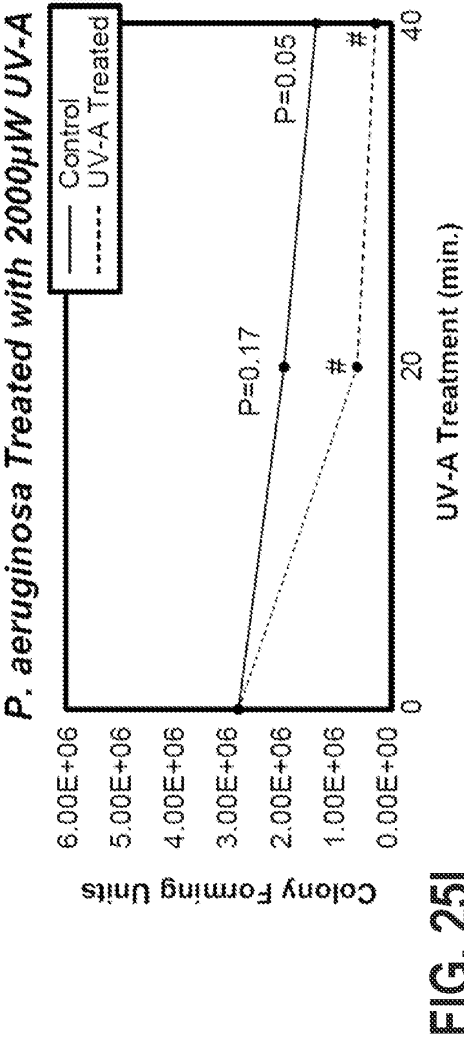


FIG. 25D







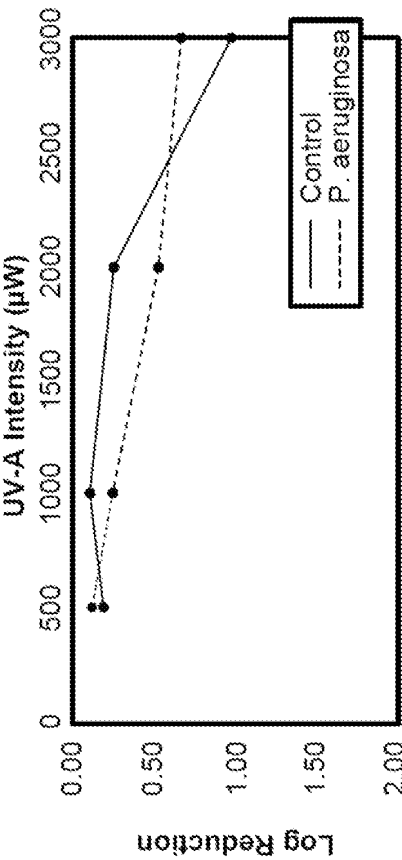


FIG. 25K

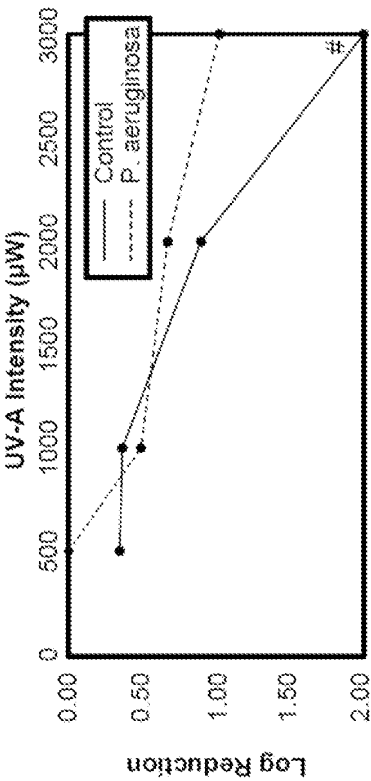


FIG. 25L

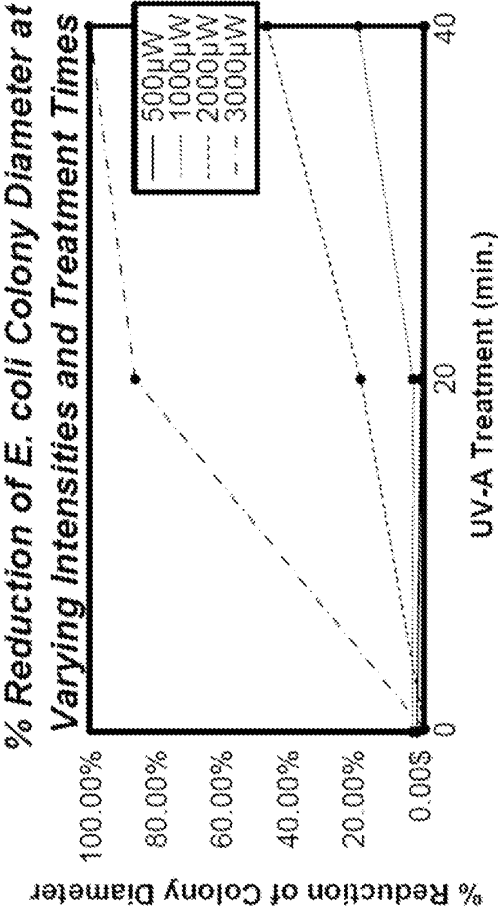


FIG. 25M

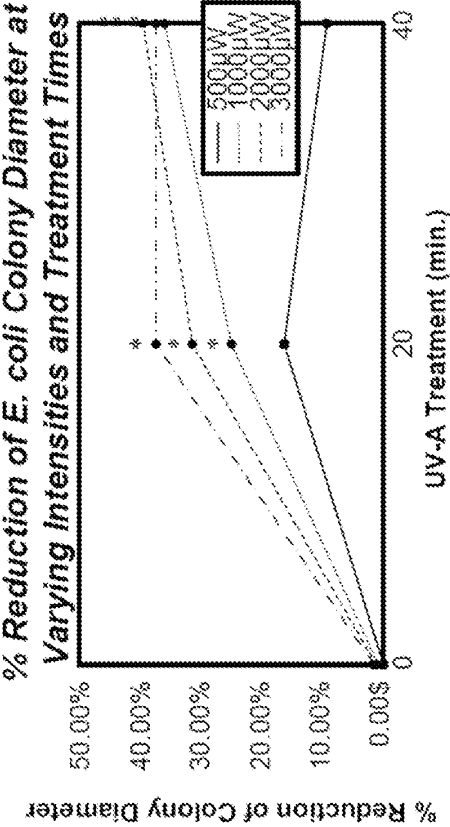


FIG. 25N

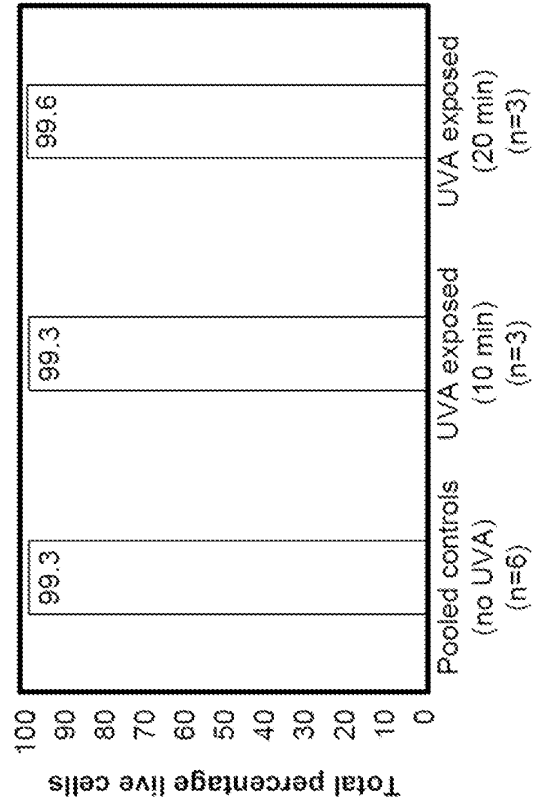


FIG. 26A

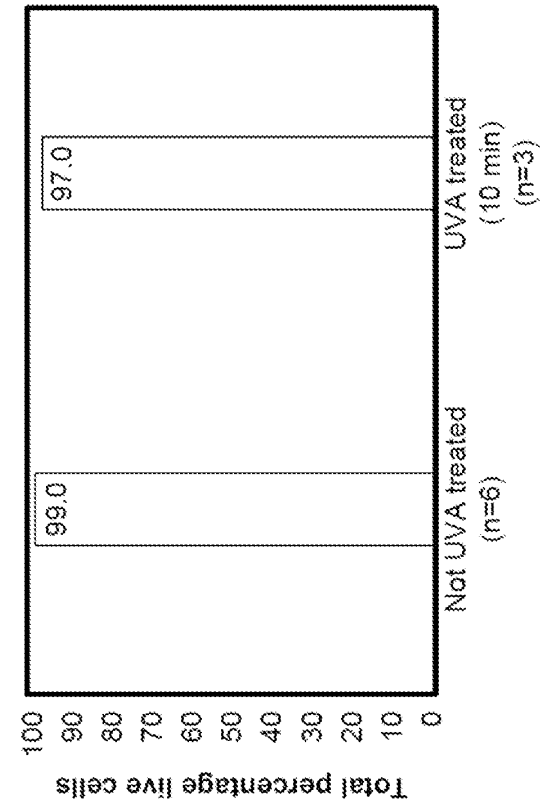


FIG. 26B

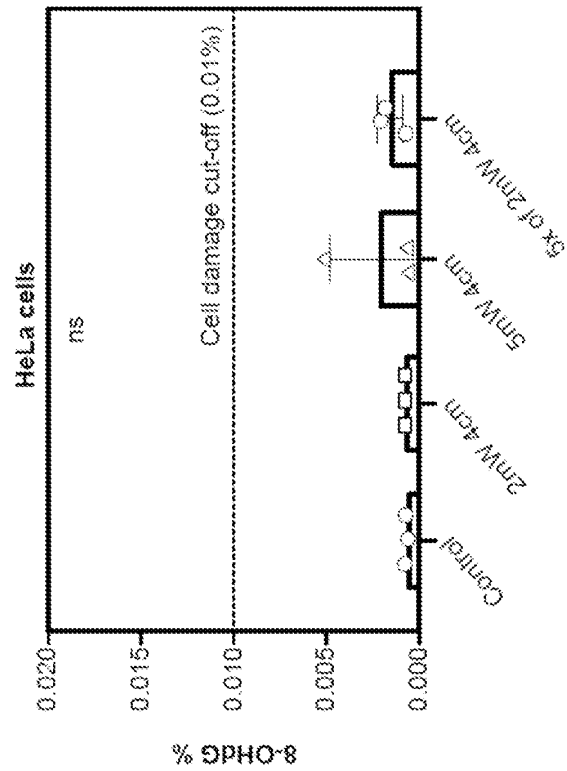


FIG. 26D

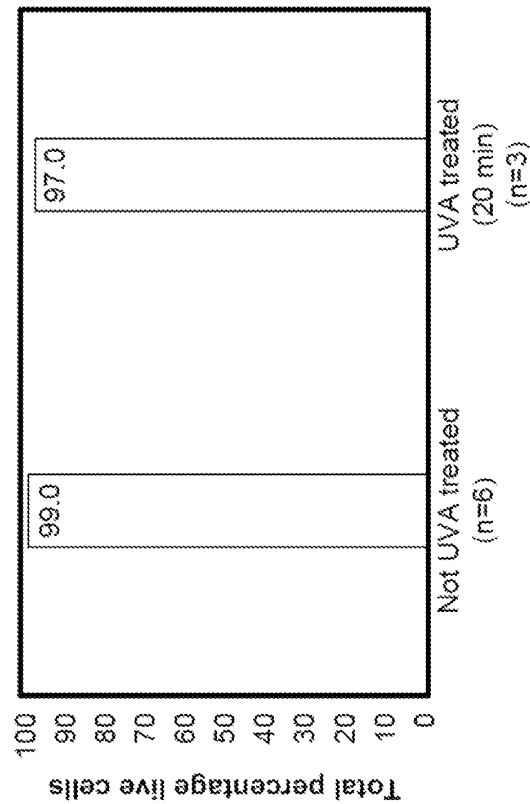


FIG. 26C

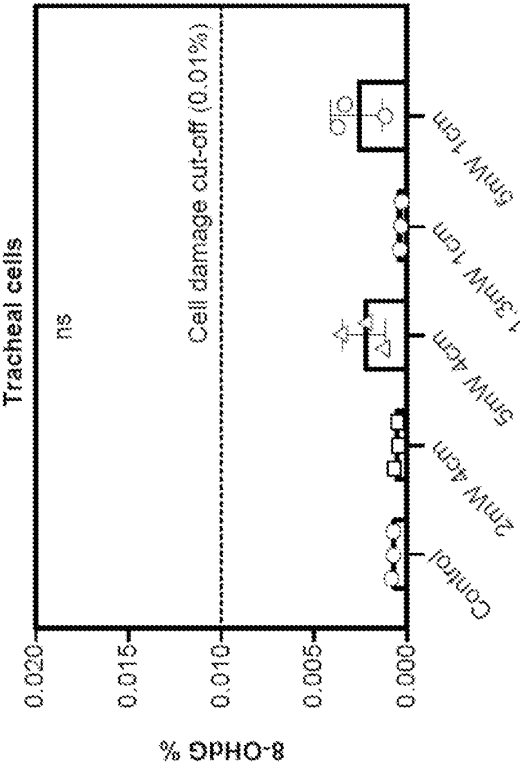


FIG. 26F

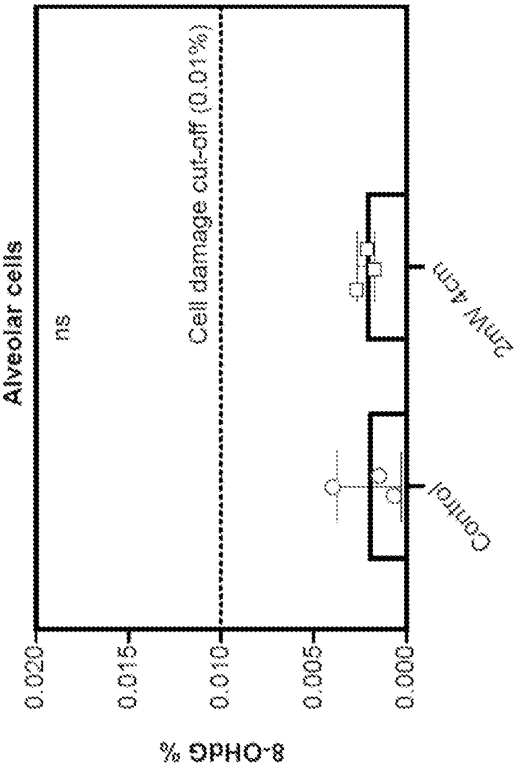


FIG. 26E

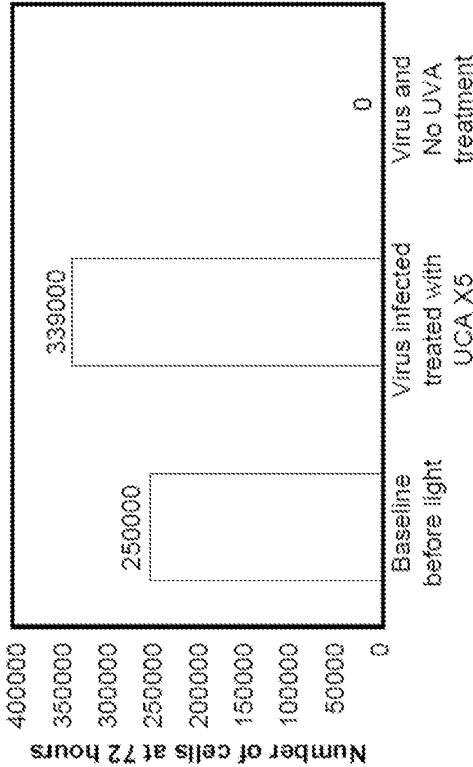


FIG. 27

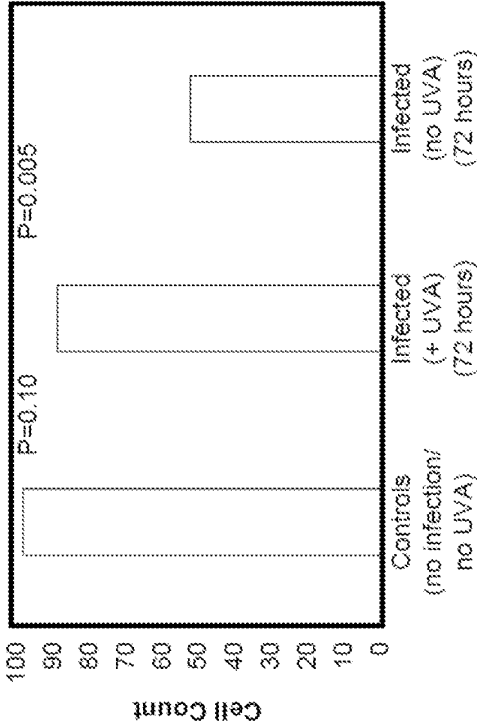


FIG. 28

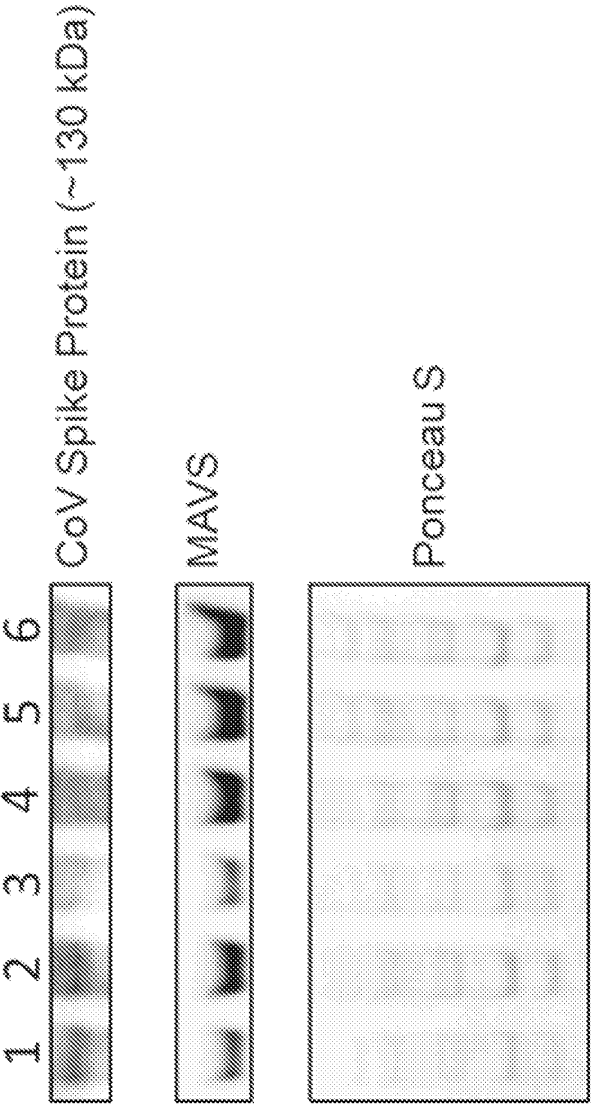
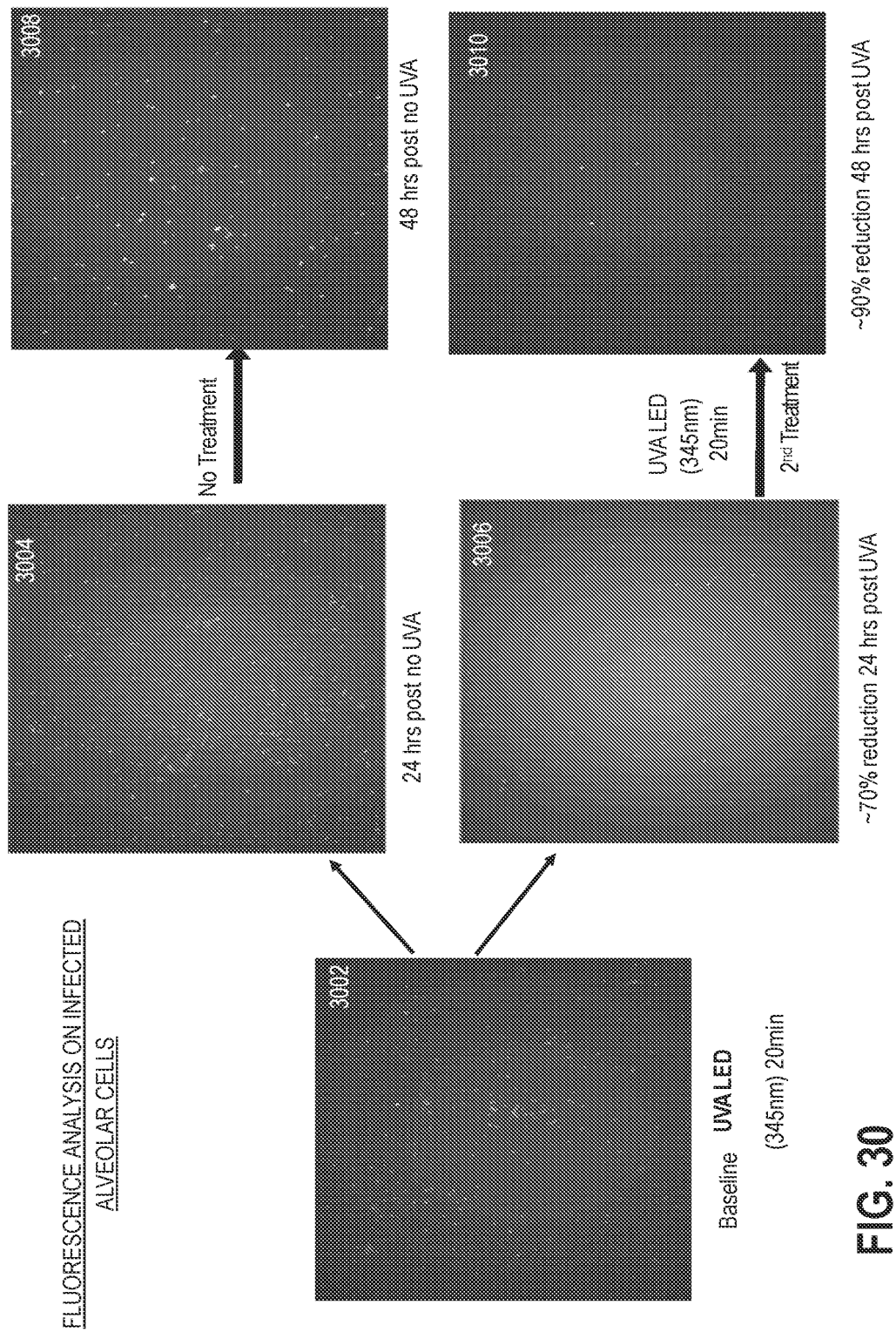


FIG. 29



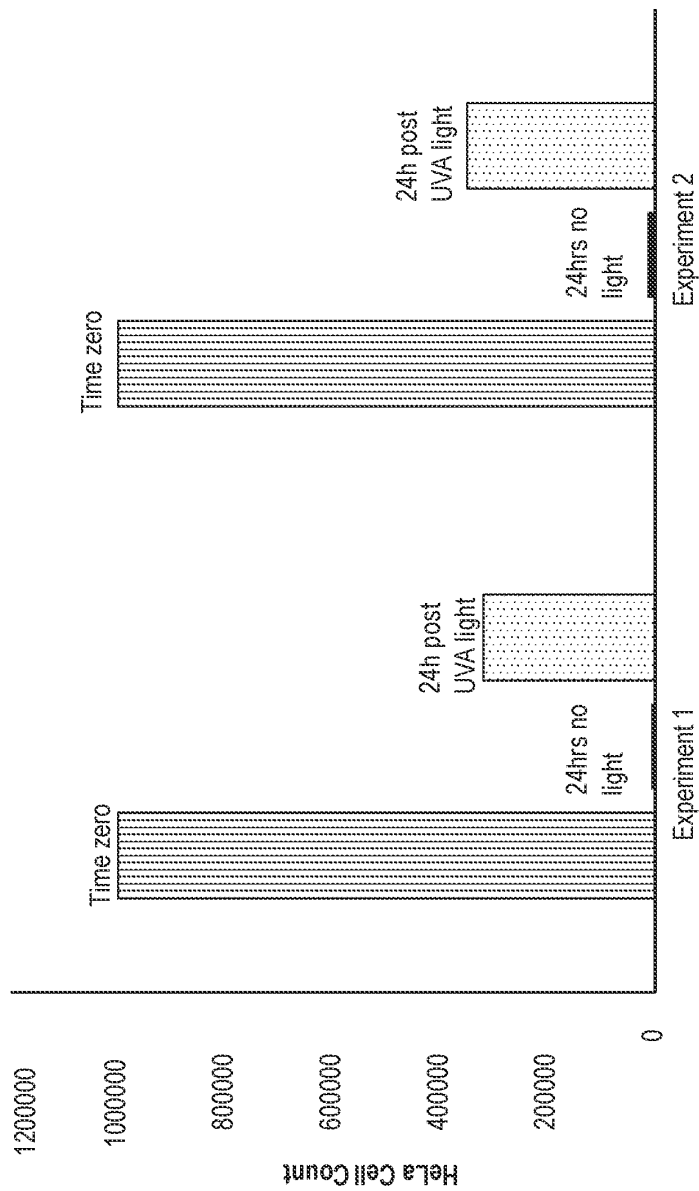


FIG. 31

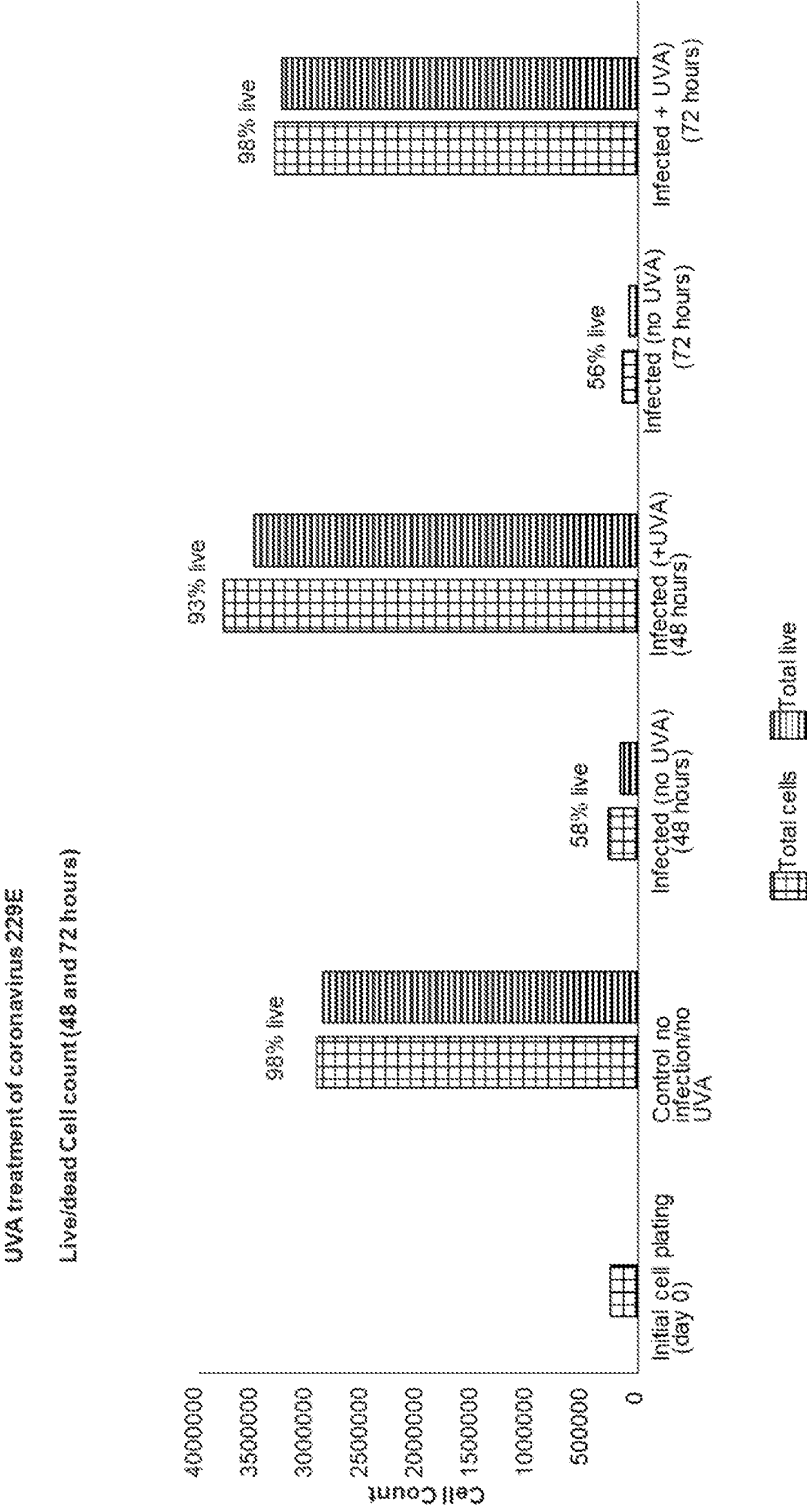


FIG. 32

UVA treatment of coronavirus 229E
Live/dead Cell count)

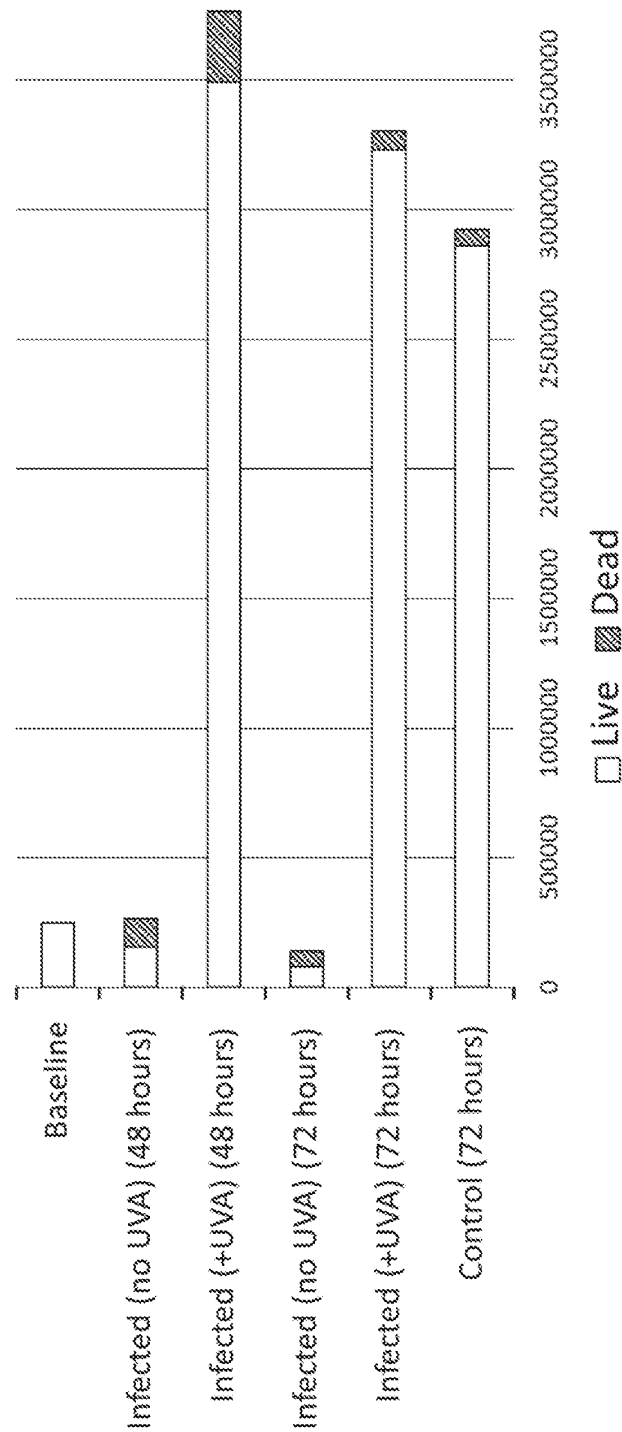


FIG. 33