

FIGURE 1

Enzymes	Protein Name	Gene Symbol	Found in which product	
Lipases	Lipoprotein lipase	<i>Lpl</i>	X	X
	Phospholipase B-domain containing 2	<i>Plbd2</i>	X	X
	Lipase A	<i>Lipa</i>	X	X
	Phospholipase A-2-activating protein	<i>Pla</i>	X	
	Phospholipase D family member 3	<i>Pld3</i>	X	X
	Phospholipase A2 group XV	<i>Pla2g15</i>	X	X
	Phospholipase C beta 1	<i>Plcb1</i>		X
	Phospholipase C delta 1	<i>Plcd1</i>		X
	DDHD domain containing protein 1	<i>Ddhd1</i>		X
	Lysophospholipase-like protein 1	<i>Lyplal1</i>		X
	Phospholipase A2 group XIA	<i>Pla2g12a</i>	X	
	Peroxioredoxin 6	<i>Prdx6</i>		X
	Lysophospholipase 1	<i>Lypla1</i>	X	
	Phospholipase A1 member A	<i>Pla1a</i>	X	
	Phospholipase A1 member A	<i>Smpd1</i>	X	X
Esterases	Phospholipase A1 member A	<i>Ppt1</i>	X	X
	Isoamyl acetate hydrolyzing esterase 1 (putative)	<i>Iah1</i>	X	X
	OTU deubiquitinase, ubiquitin aldehyde binding 1	<i>Otub1</i>	X	X
	Lysophospholipase 2 (Acyl-protein thioesterase 2)	<i>Lypla2</i>	X	X
	Acyl-coA thioesterase 13	<i>Acof13</i>		X
	Fatty acid synthase	<i>Fasn</i>		X
	Carboxylesterase 1f/Liver carboxylesterase B-1-like	<i>Ces1f/Ces-b1l</i>	X	
	Carboxylesterase 1	<i>Ces1</i>	X	
	Sialic acid acetyltransferase	<i>Siae</i>	X	
	Phospholipase A2 group VII	<i>Pla2g7</i>		X
Hydrolases	Ubiquitin specific peptidase 5	<i>Usp5</i>		X
	N-acylsphingosine amidohydrolase 1 (Acid ceramidase)	<i>Asah1</i>		X
	Acylcamitine hydrolase	<i>Hach</i>	X	

FIGURE 2

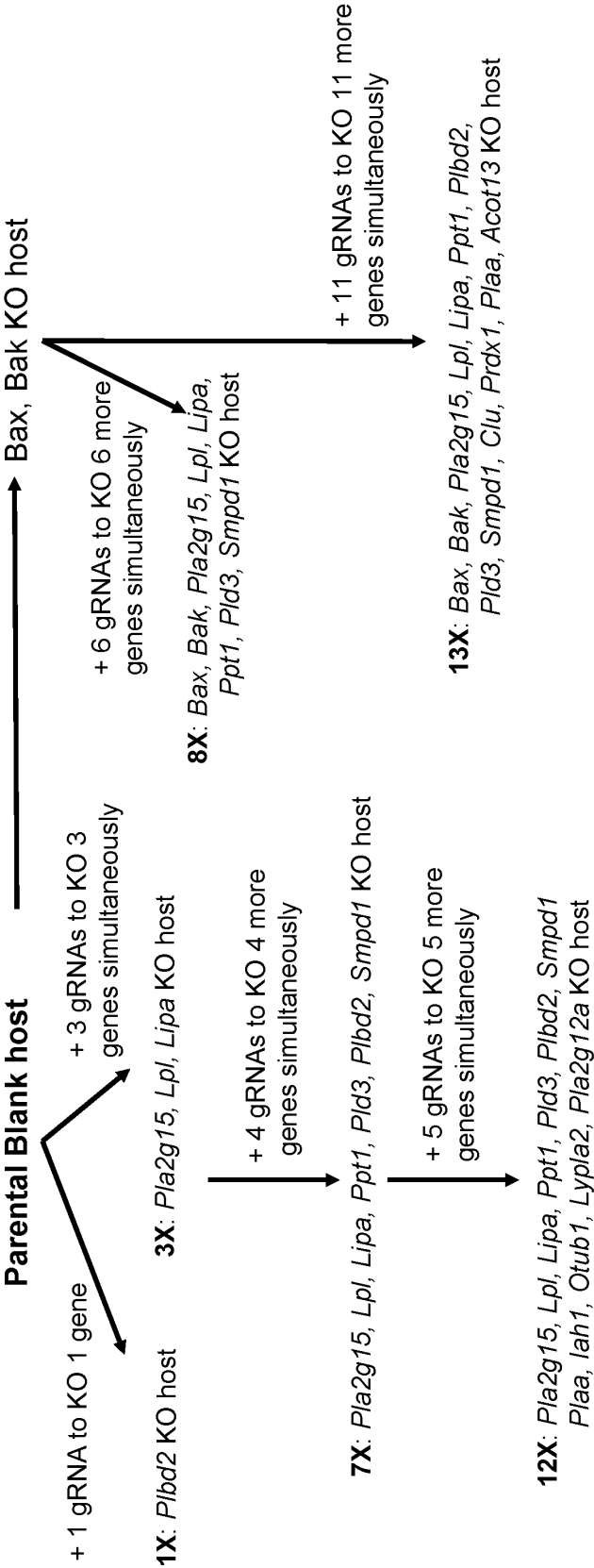
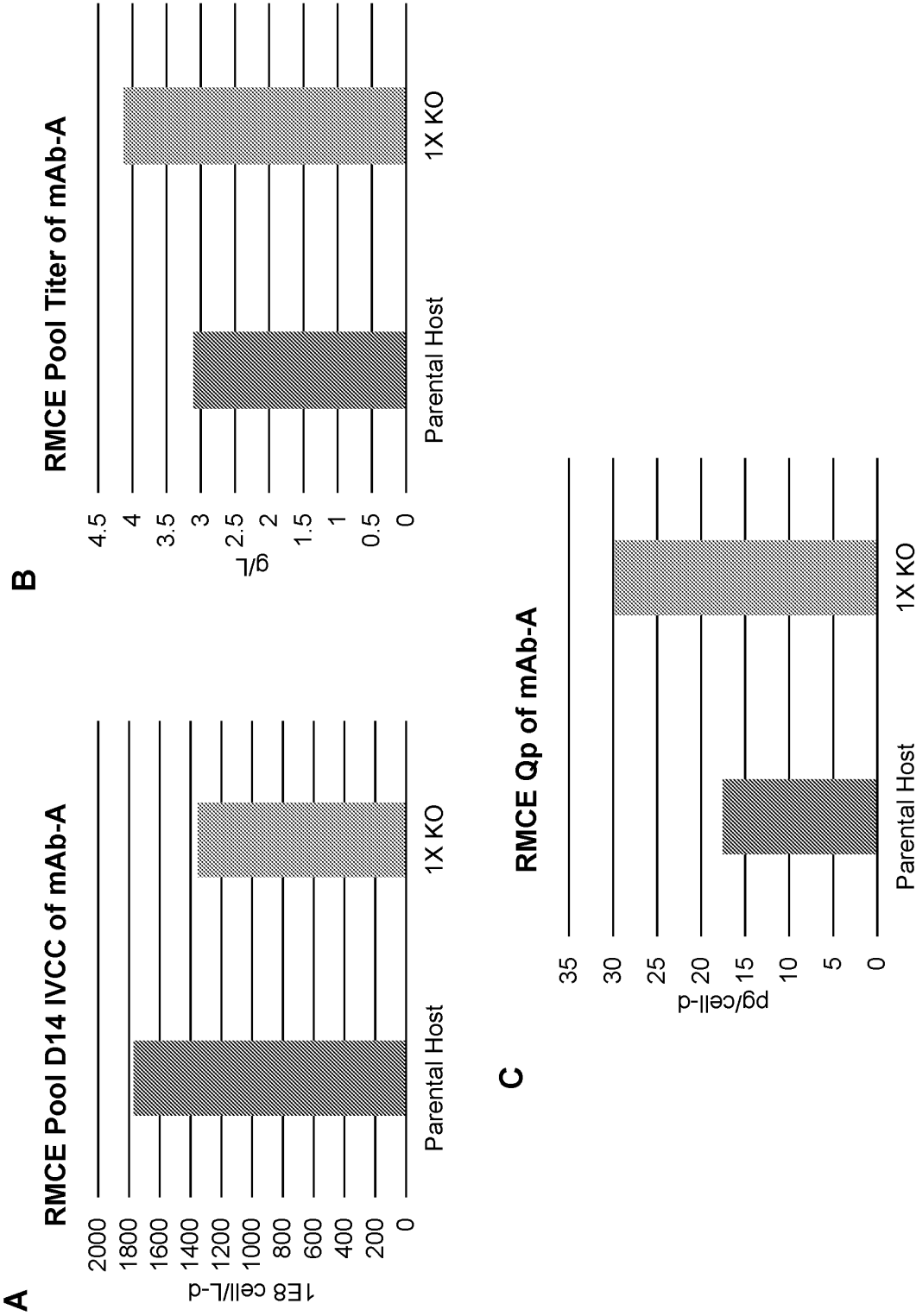


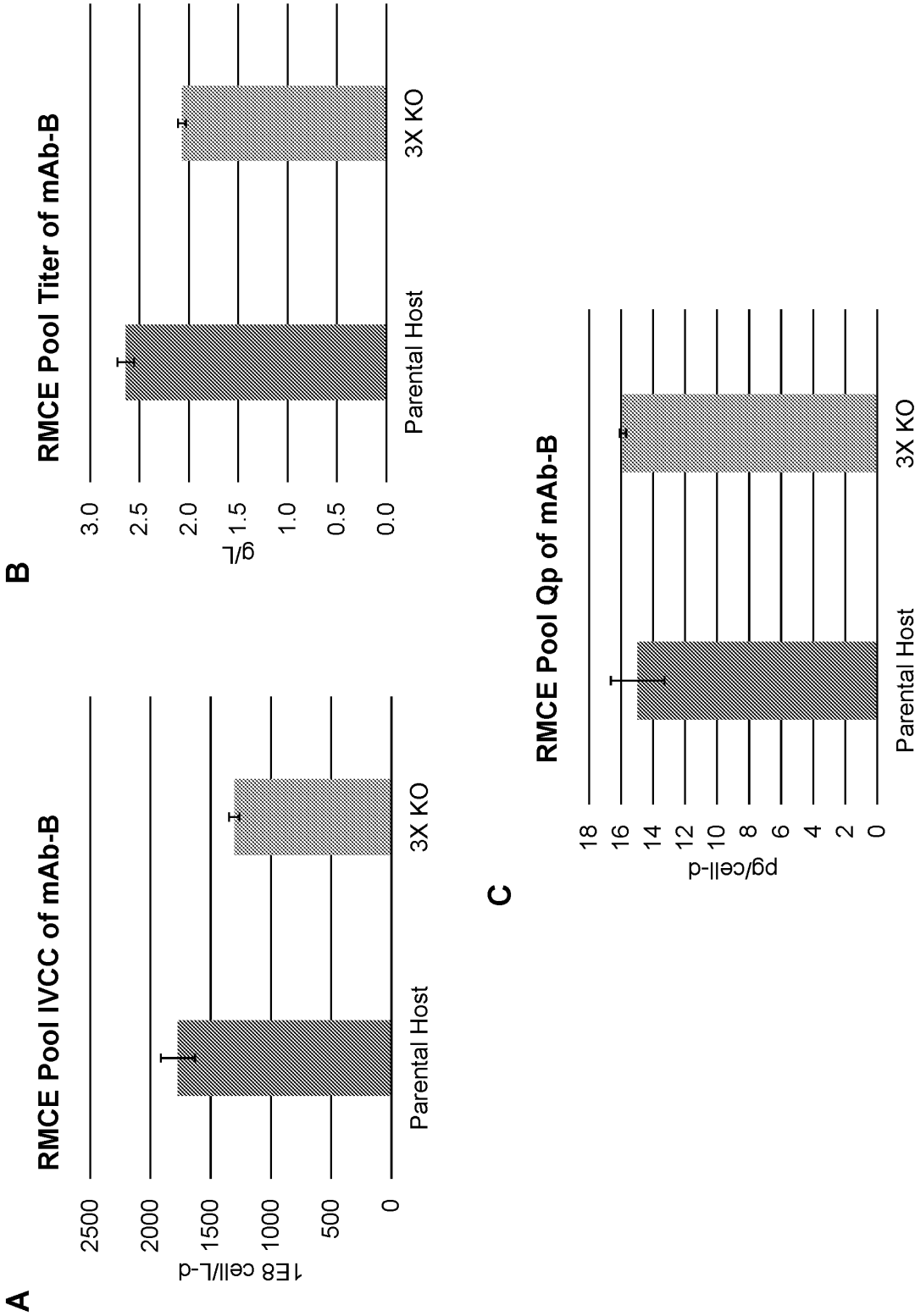
FIGURE 3

Blank KO host	Genes Knocked Out
Parental Blank Host	None
1X KO	<i>Plbd2</i>
3X KO	<i>Pla2g15, Lpl, Lipa</i>
7X KO	<i>Pla2g15, Lpl, Lipa, Ppt1, Plid3, Plbd2, Smpd1</i>
12X KO	<i>Pla2g15, Lpl, Lipa, Ppt1, Plid3, Plbd2, Smpd1, Plaa, lah1, Otub1, Lypla2, Pla2g12a</i>
8X KO	<i>Bax, Bak, Pla2g15, Lpl, Lipa, Ppt1, Plid3, Smpd1</i>
13X KO	<i>Bax, Bak, Pla2g15, Lpl, Lipa, Ppt1, Plbd2, Plid3, Smpd1, Clu, Prdx1, Plaa, Acot13</i>

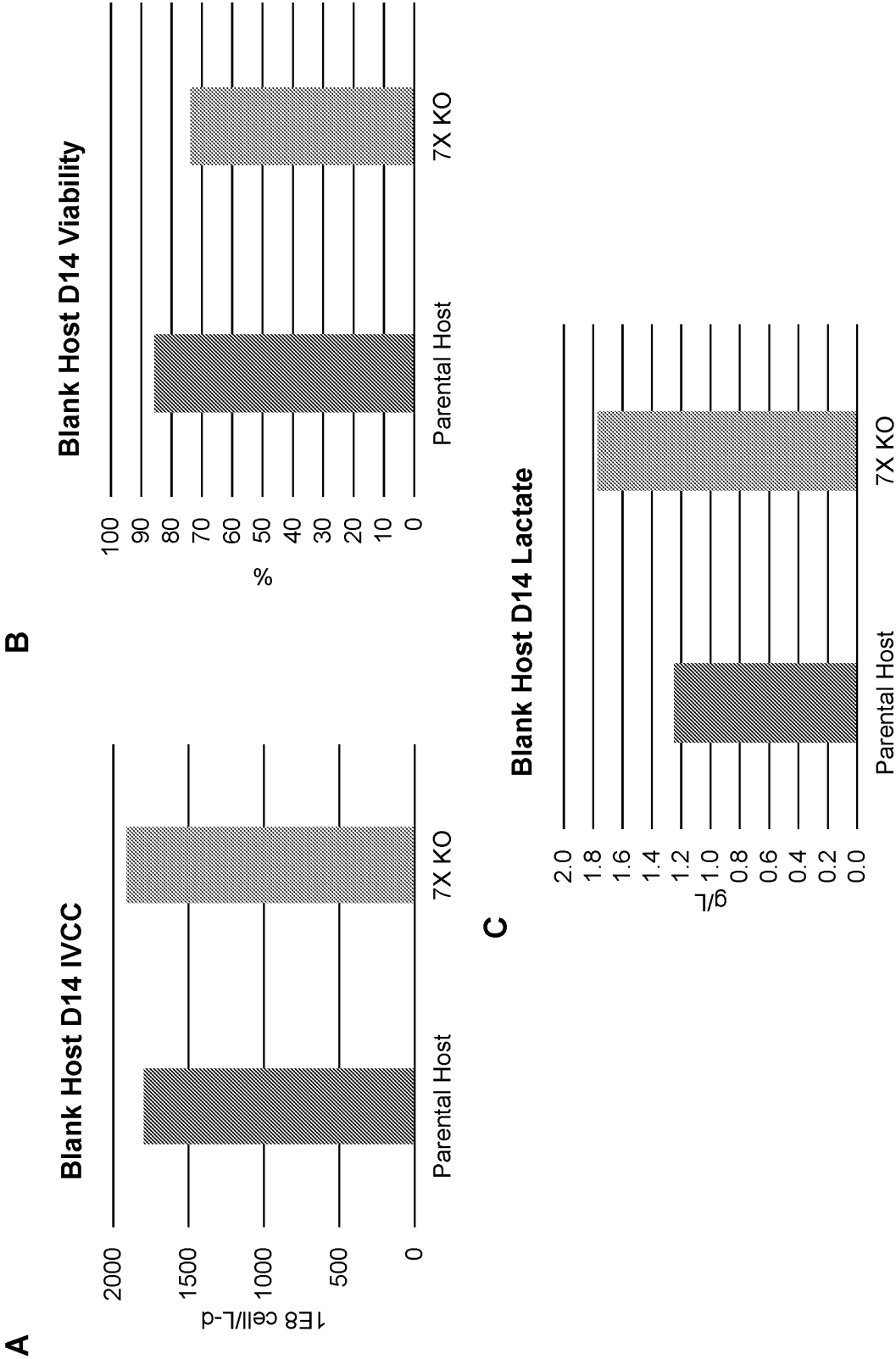
FIGURES 4A-4C



FIGURES 5A-5C

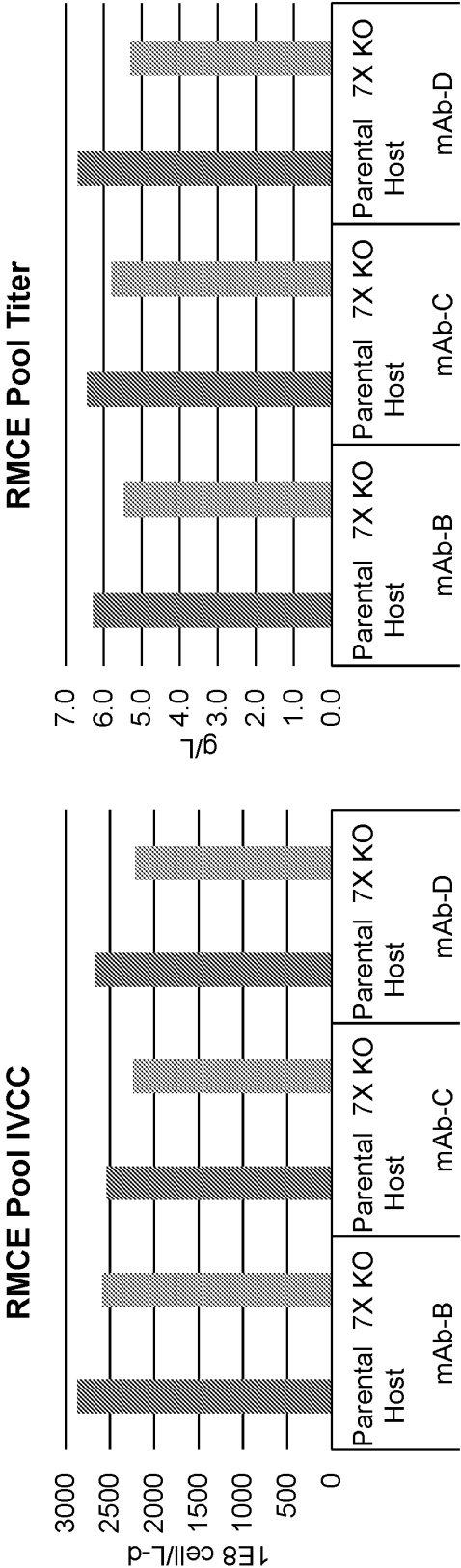


FIGURES 6A-6C



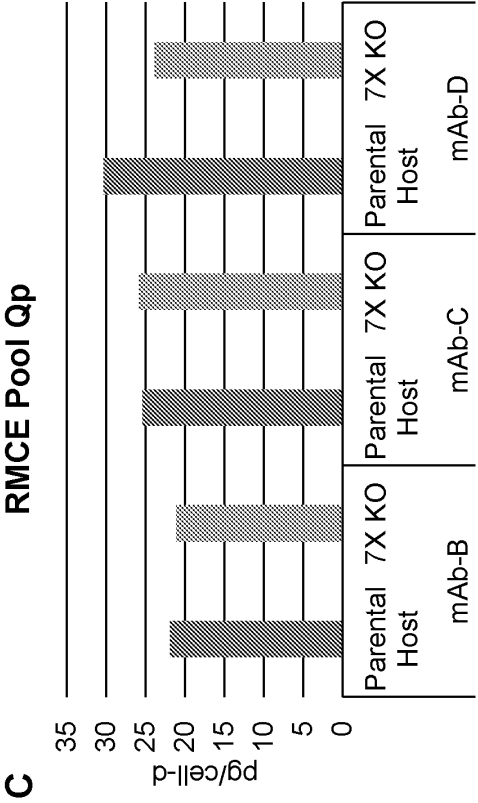
FIGURES 7A-7C

A



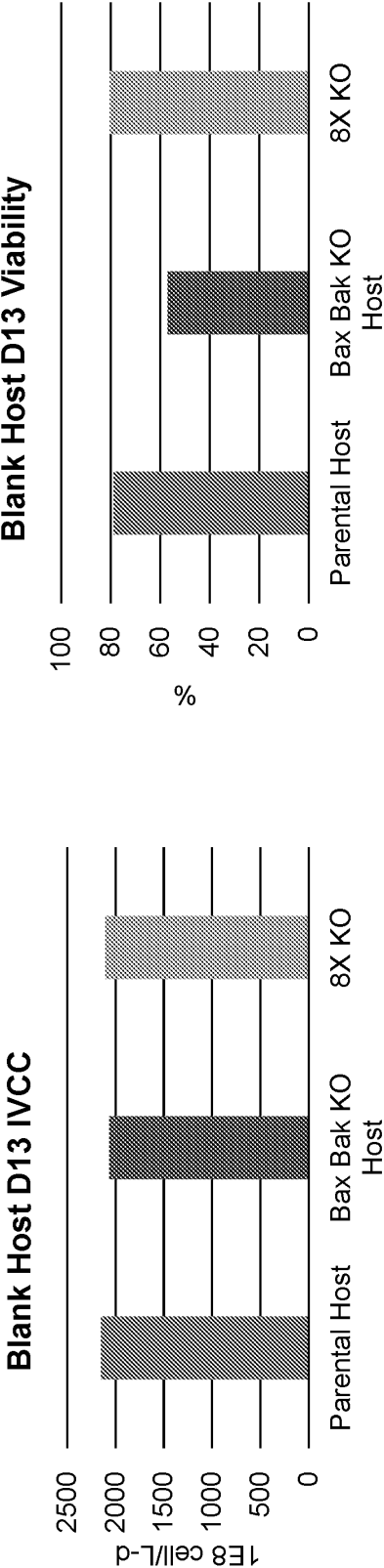
B

C



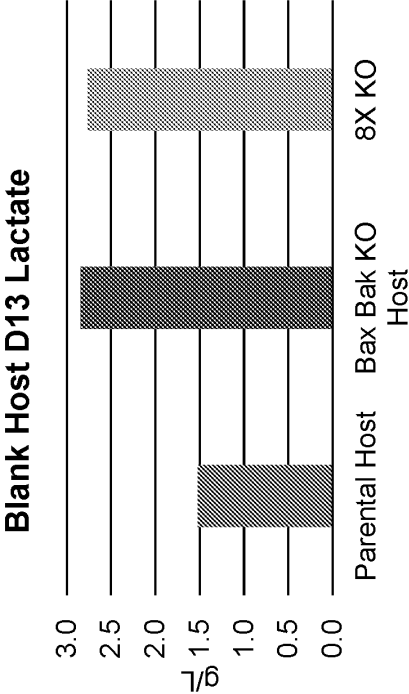
FIGURES 8A-8C

A

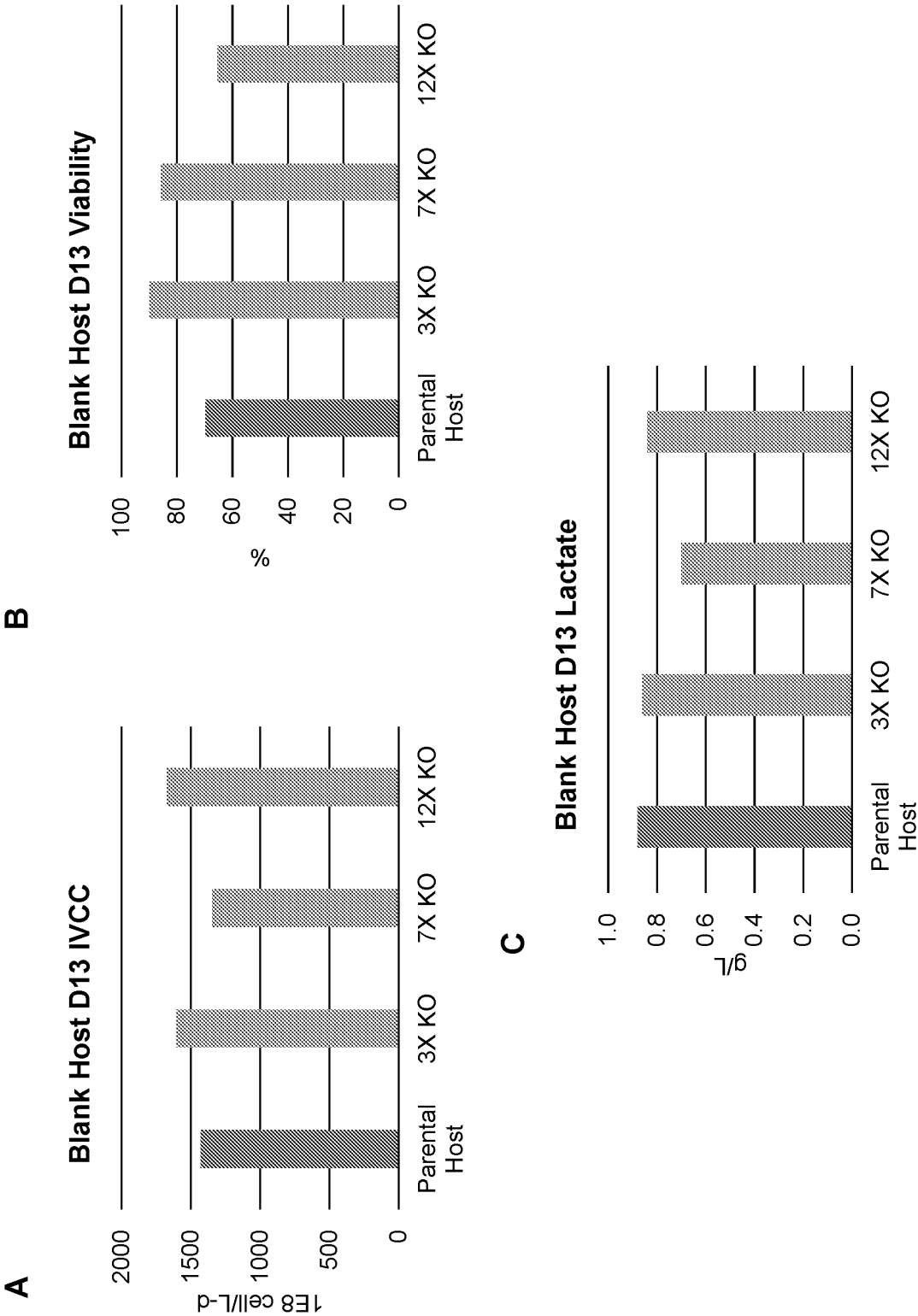


B

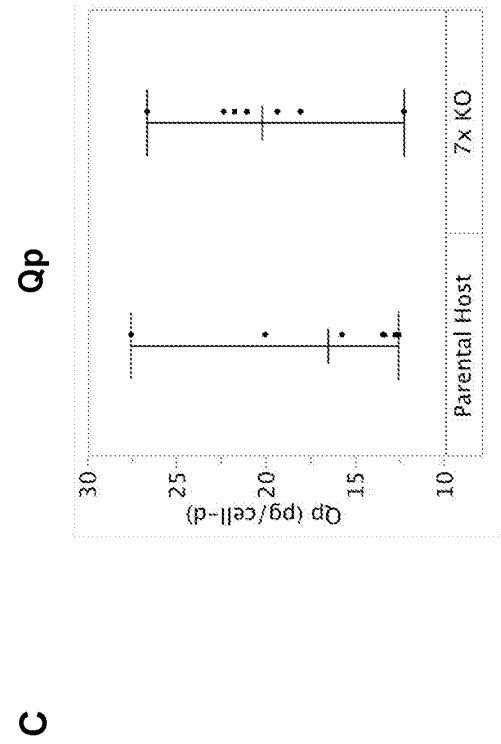
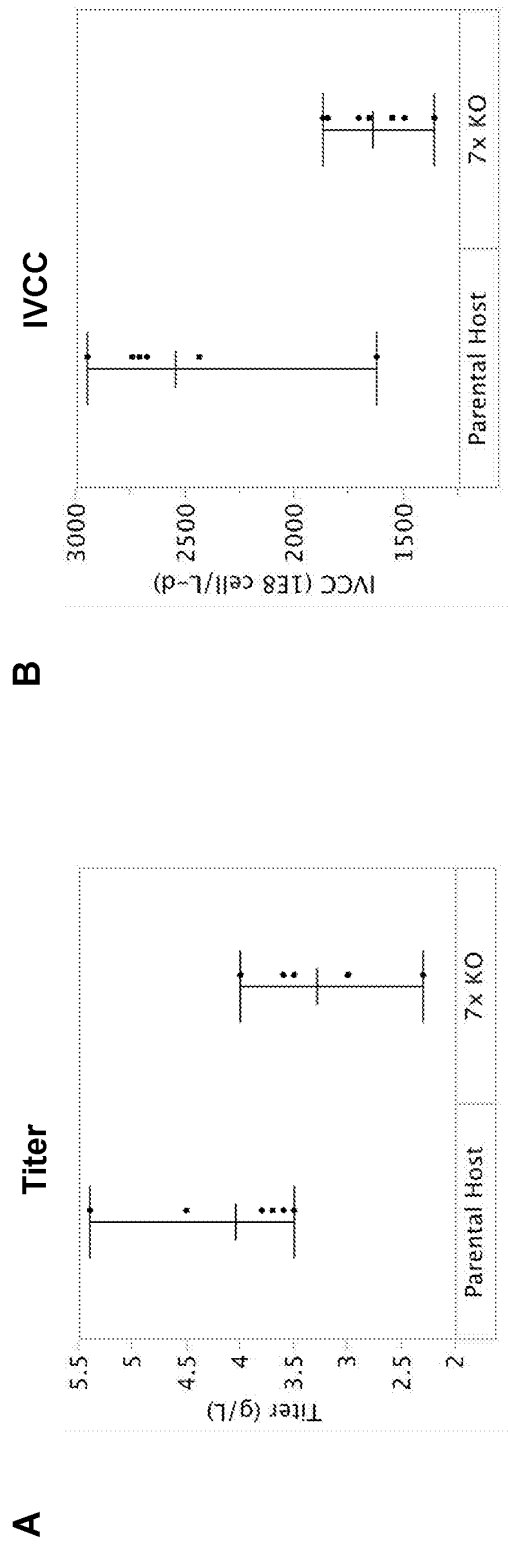
C



FIGURES 9A-9C



FIGURES 10A-10C



FIGURES 11A-11C

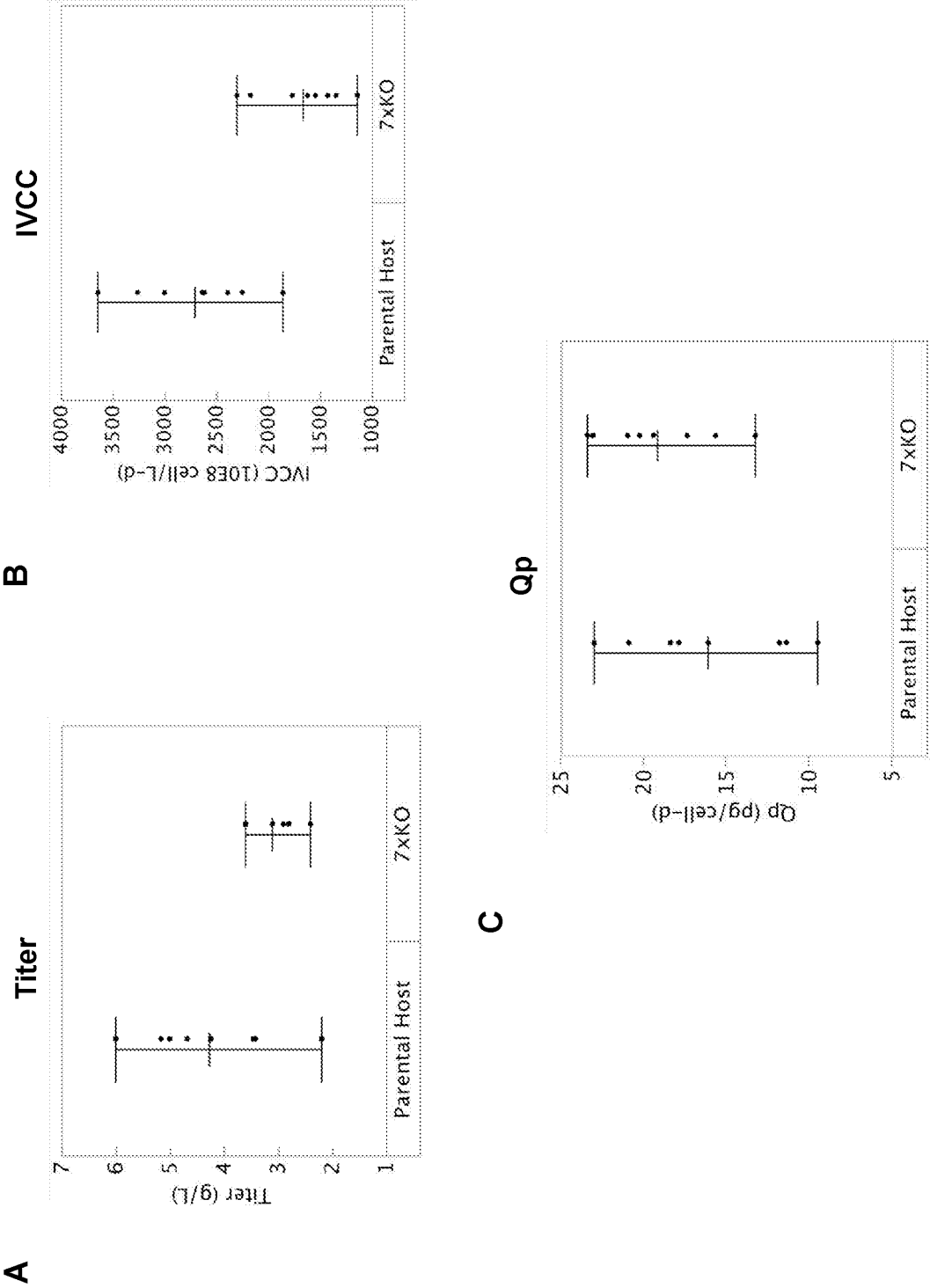
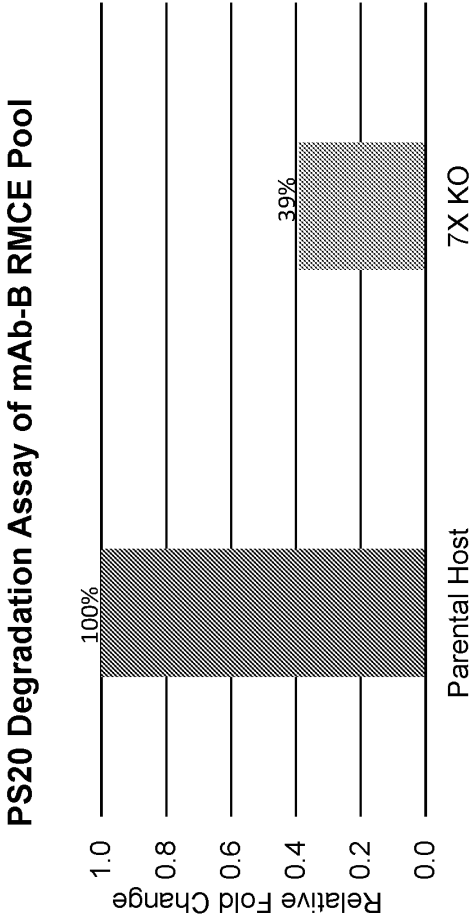
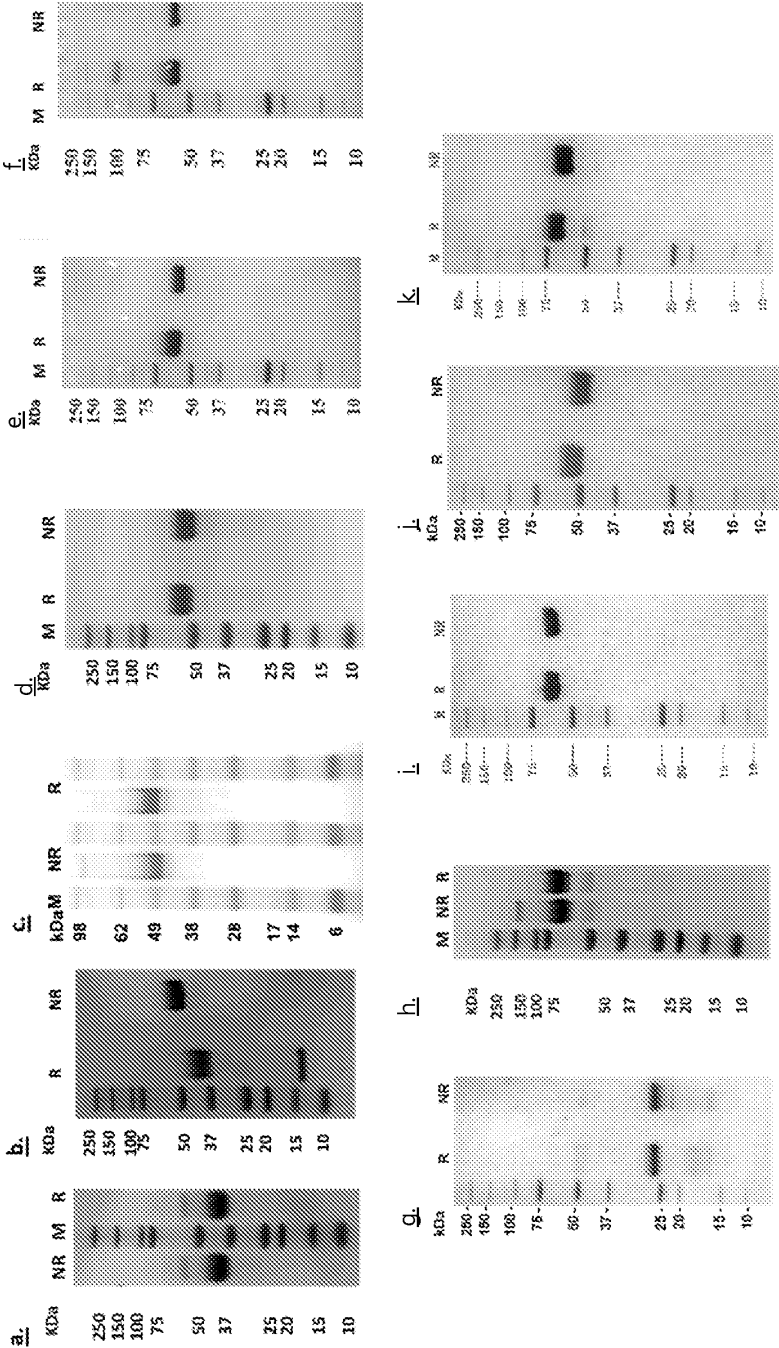


FIGURE 12



FIGURES 13A-13K



FIGURES 14A-14C

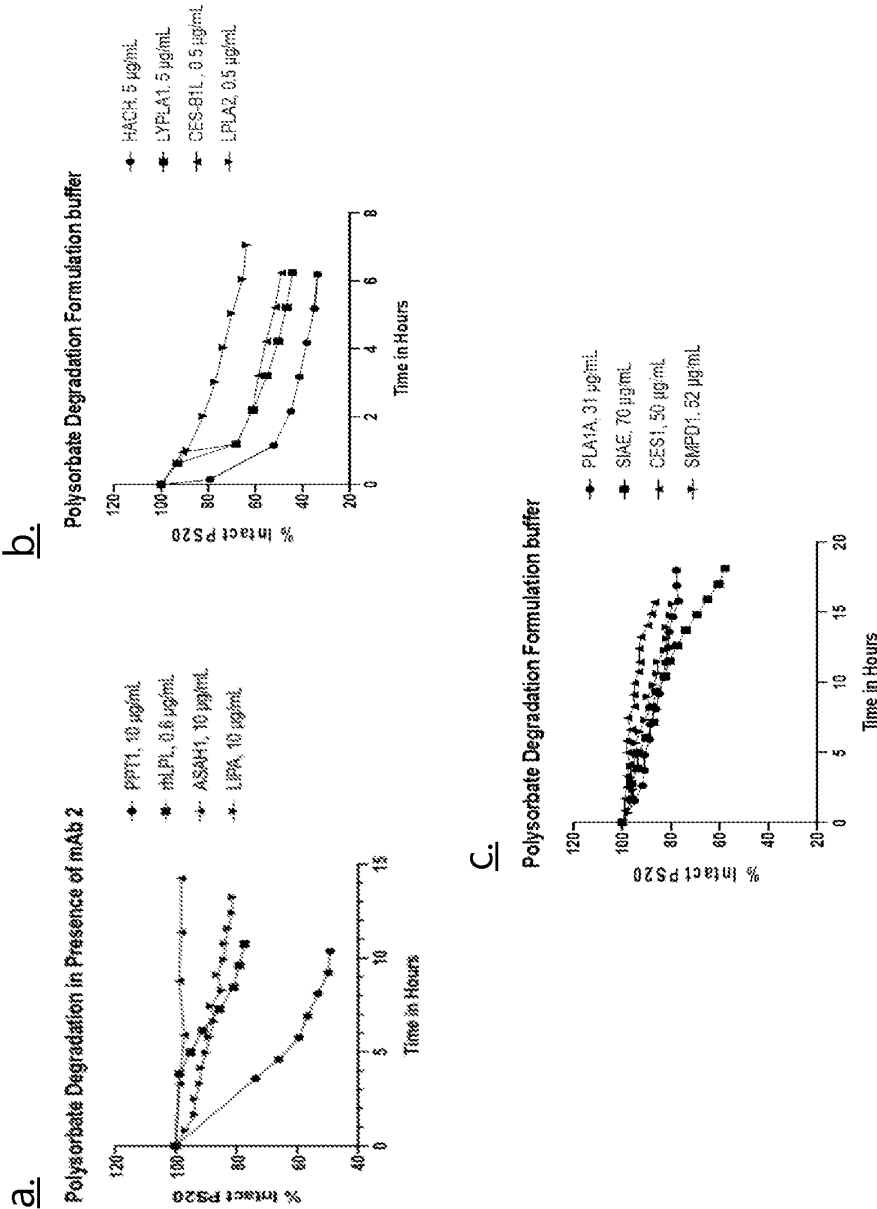


FIGURE 15

Product	Genes Knocked Out (KO) in CHO Parental Blank Host Cells	Decrease by PS20 Degradation Assay (Relative to Control Cells without KO)
mAb W	7X (<i>Pla2g15</i> , <i>Lpl</i> , <i>Lipa</i> , <i>Ppt1</i> , <i>Pld3</i> , <i>Plbd2</i> , <i>Smpd1</i>)	24%
mAb X	7X (<i>Pla2g15</i> , <i>Lpl</i> , <i>Lipa</i> , <i>Ppt1</i> , <i>Pld3</i> , <i>Plbd2</i> , <i>Smpd1</i>)	16%
mAb Y	12X (<i>Pla2g15</i> , <i>Lpl</i> , <i>Lipa</i> , <i>Ppt1</i> , <i>Pld3</i> , <i>Plbd2</i> , <i>Smpd1</i> , <i>Plaa</i> , <i>lah1</i> , <i>Otub1</i> , <i>Lypla2</i> , <i>Pla2g12a</i>)	54%
mAb Z	12X (<i>Pla2g15</i> , <i>Lpl</i> , <i>Lipa</i> , <i>Ppt1</i> , <i>Pld3</i> , <i>Plbd2</i> , <i>Smpd1</i> , <i>Plaa</i> , <i>lah1</i> , <i>Otub1</i> , <i>Lypla2</i> , <i>Pla2g12a</i>)	30%

Figure 16

Product	Genes Knocked Out (KO) in Parental mAb T Cells	Decrease by PS20 Degradation Assay (Relative to Control Cells without KO)
mAb T	1X (<i>Pla2g15</i>)	38%
	2X (<i>Pla2g15</i> , <i>Lpl</i>)	52%
	3X (<i>Pla2g15</i> , <i>Lpl</i> , <i>Lipa</i>)	70%
	6X (<i>Pla2g15</i> , <i>Lpl</i> , <i>Lipa</i> , <i>Ppt1</i> , <i>Pld3</i> , <i>Plbd2</i>)	94%