

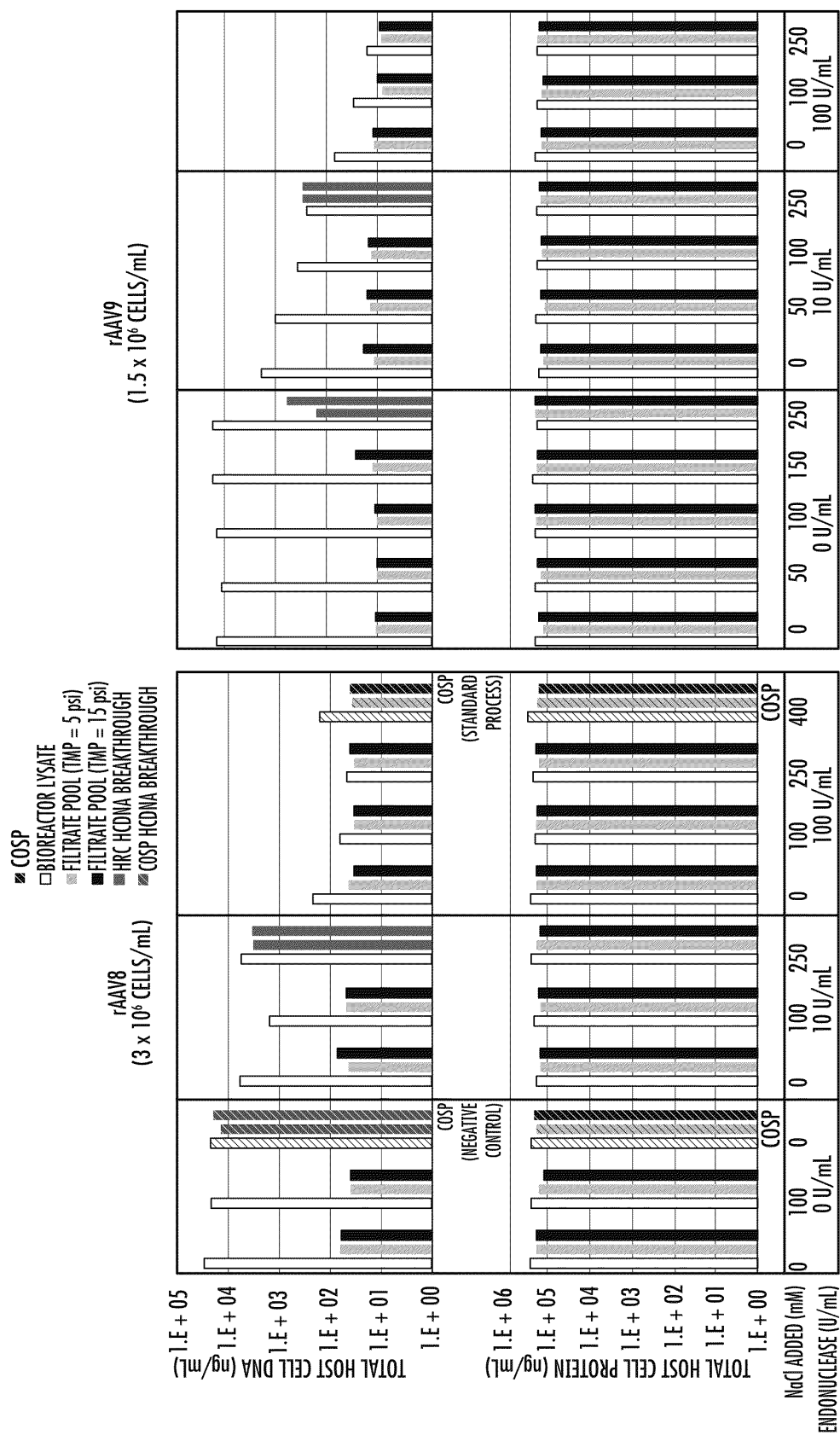
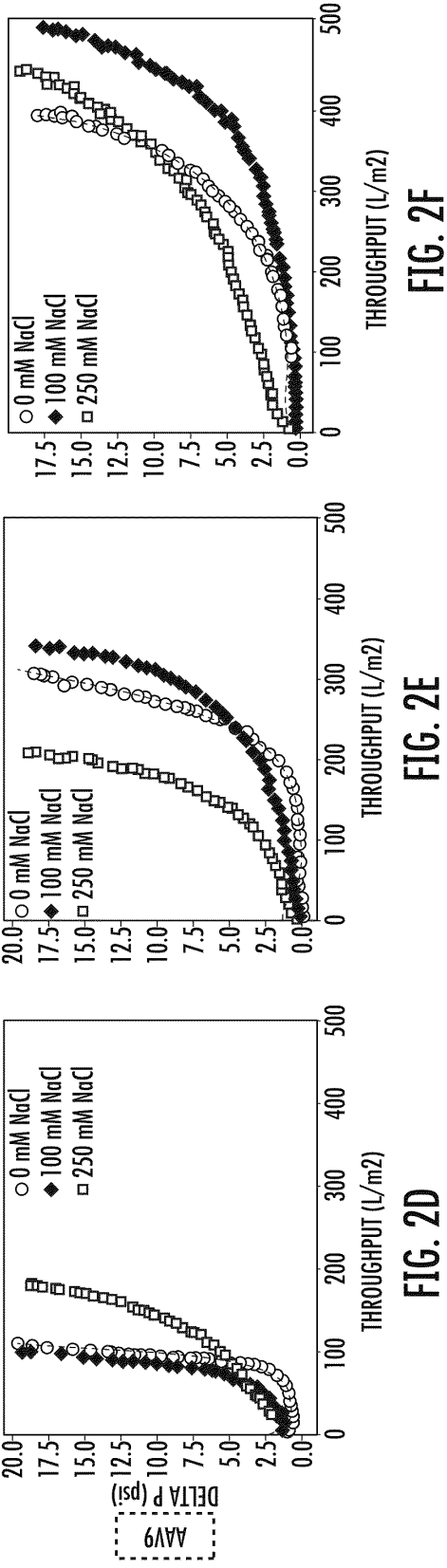
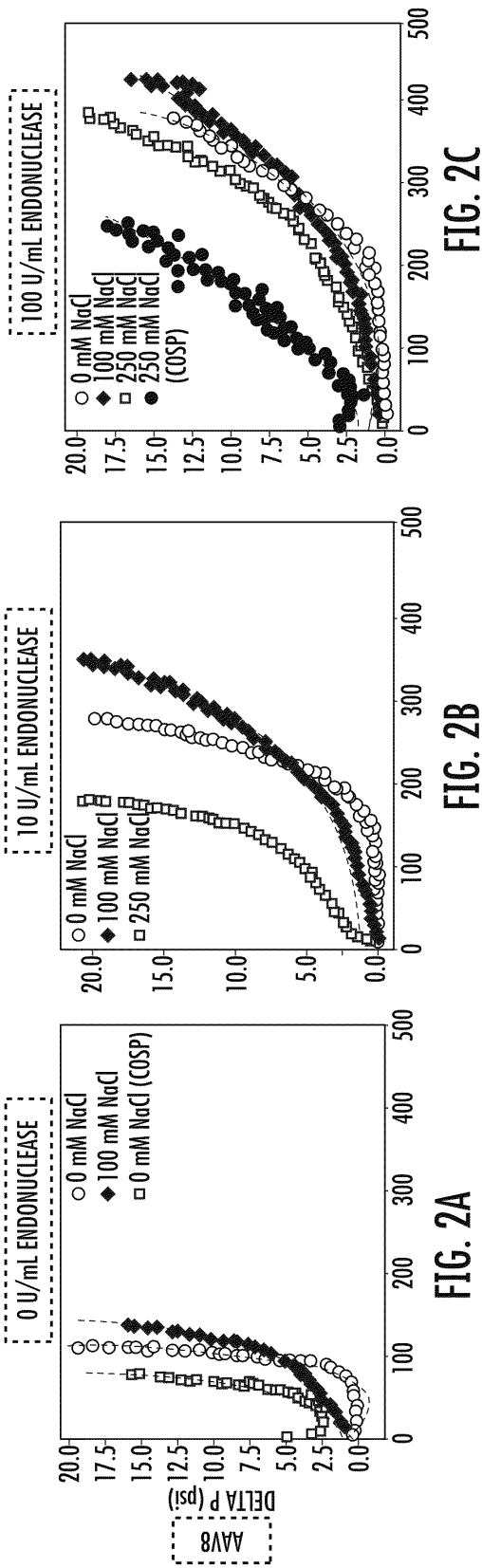


FIG. 1B



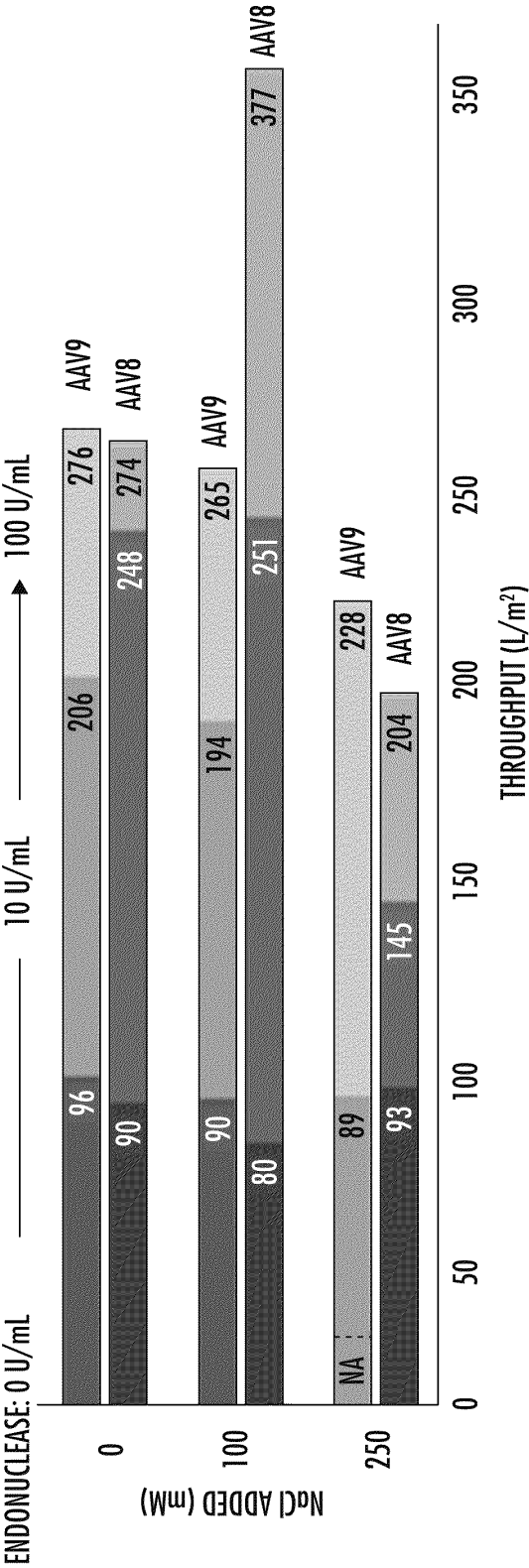


FIG. 3

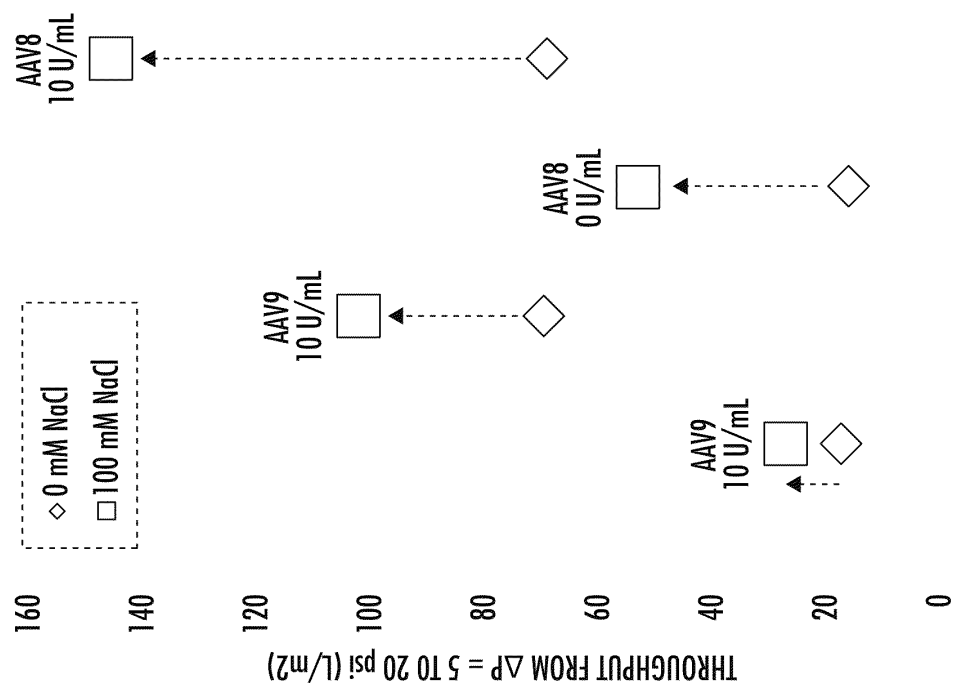


FIG. 4

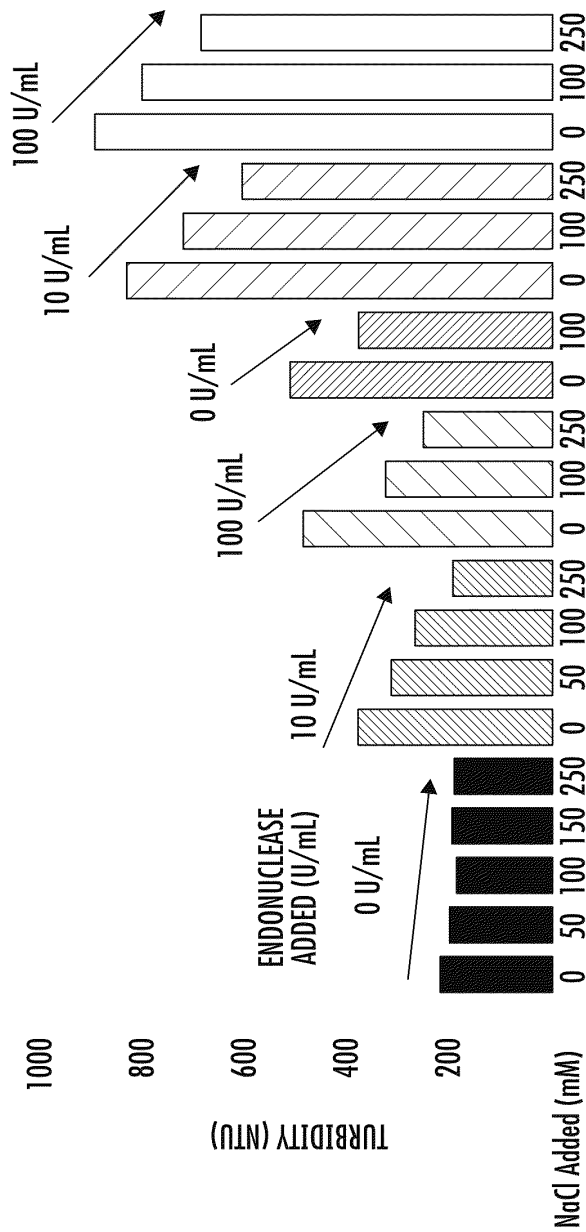


FIG. 5

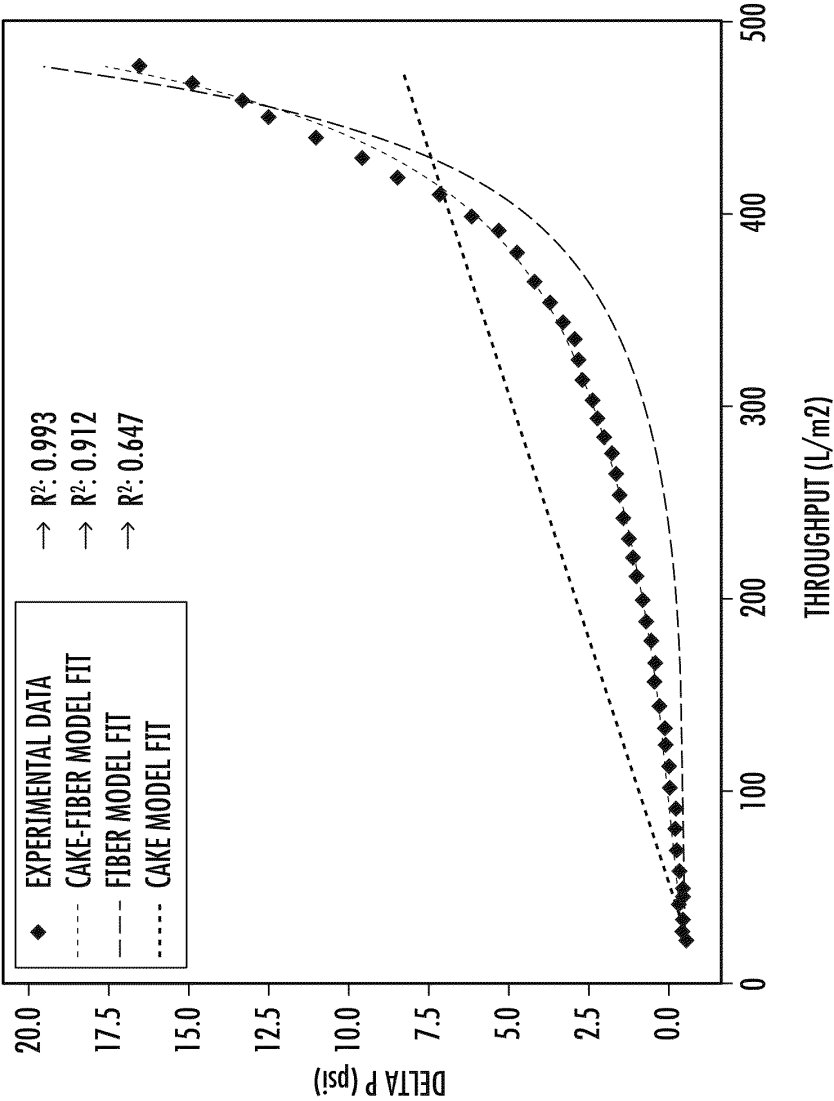


FIG. 6

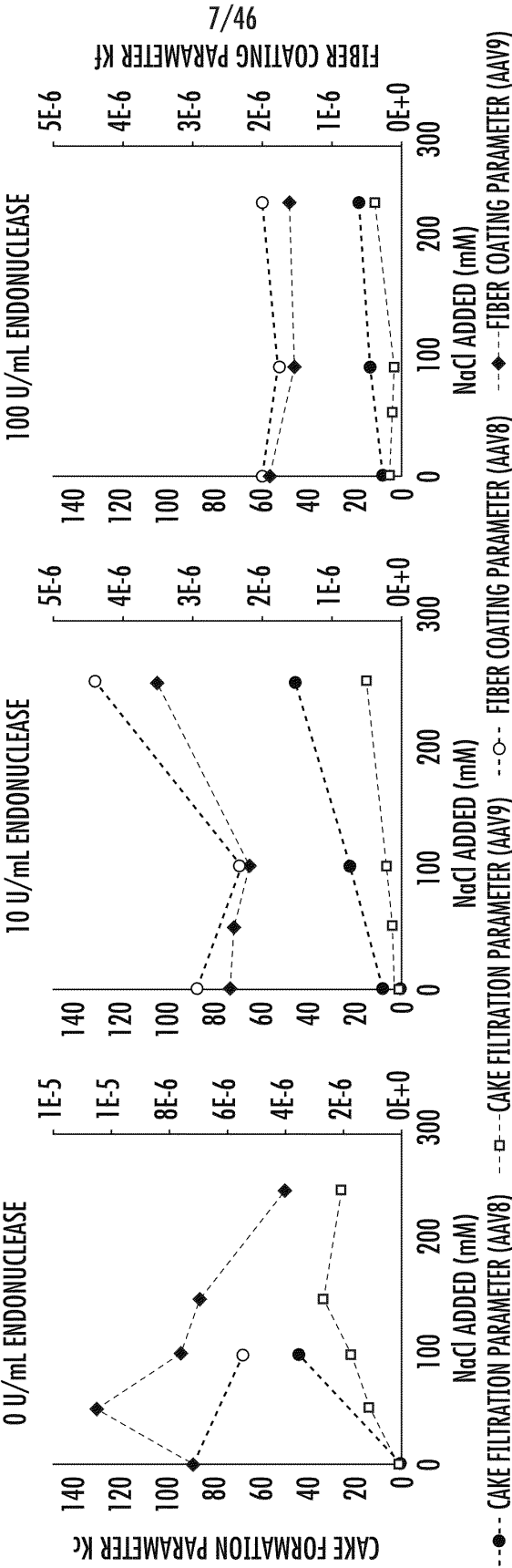


FIG. 7C

FIG. 7B

FIG. 7A

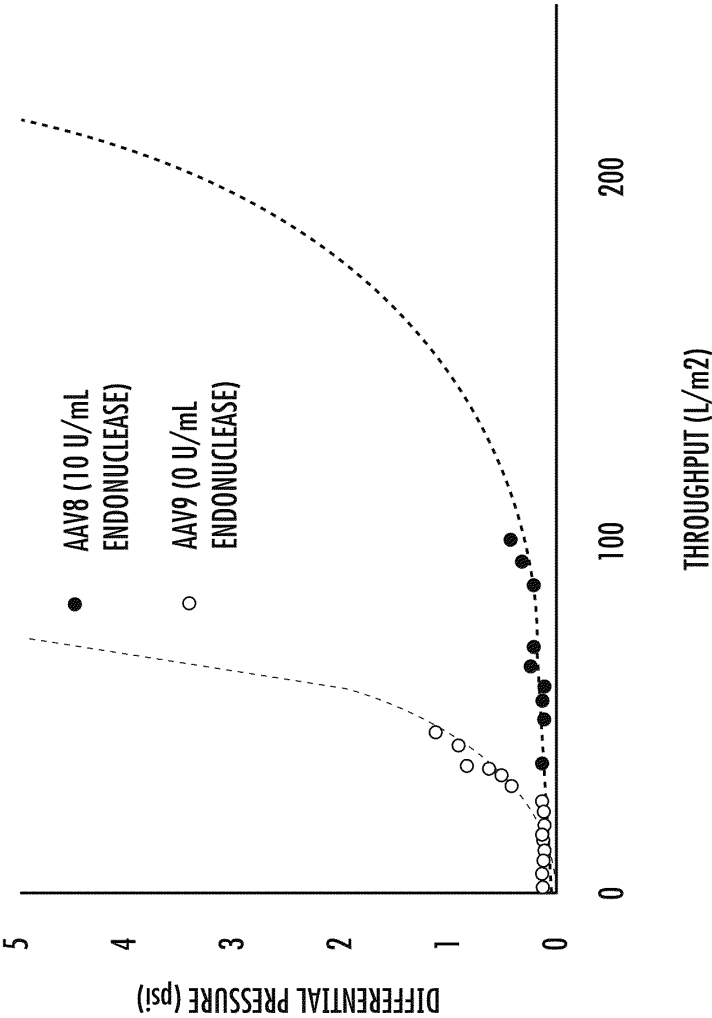


FIG. 7D

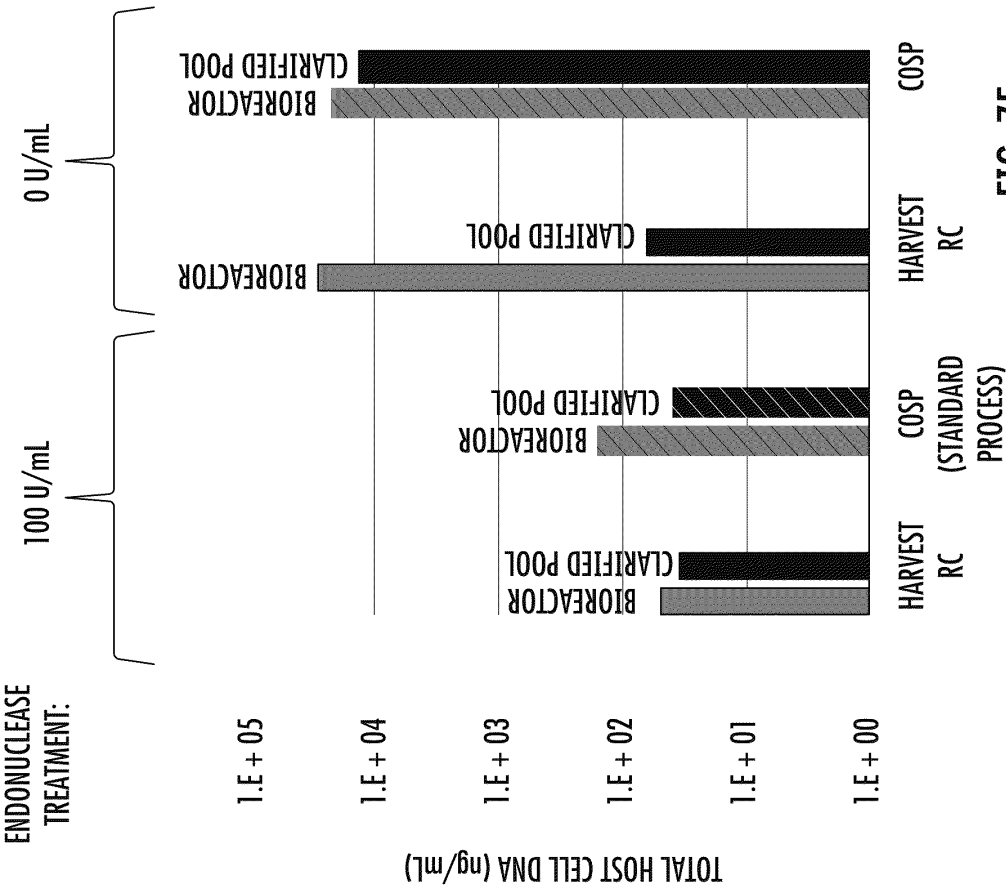


FIG. 7E

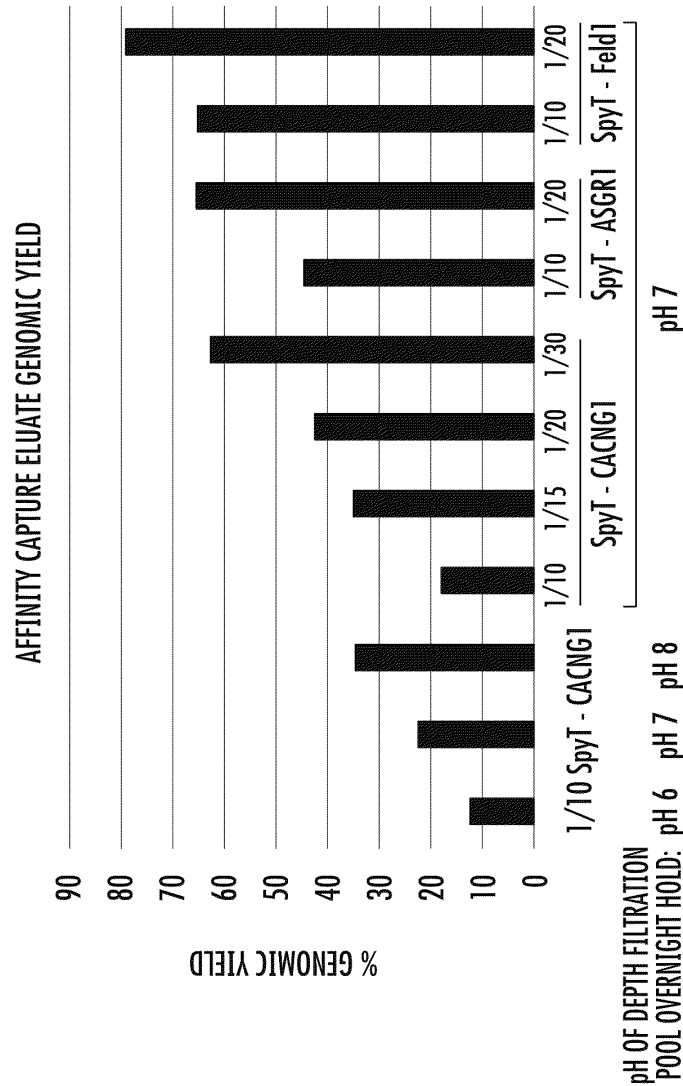


FIG. 8

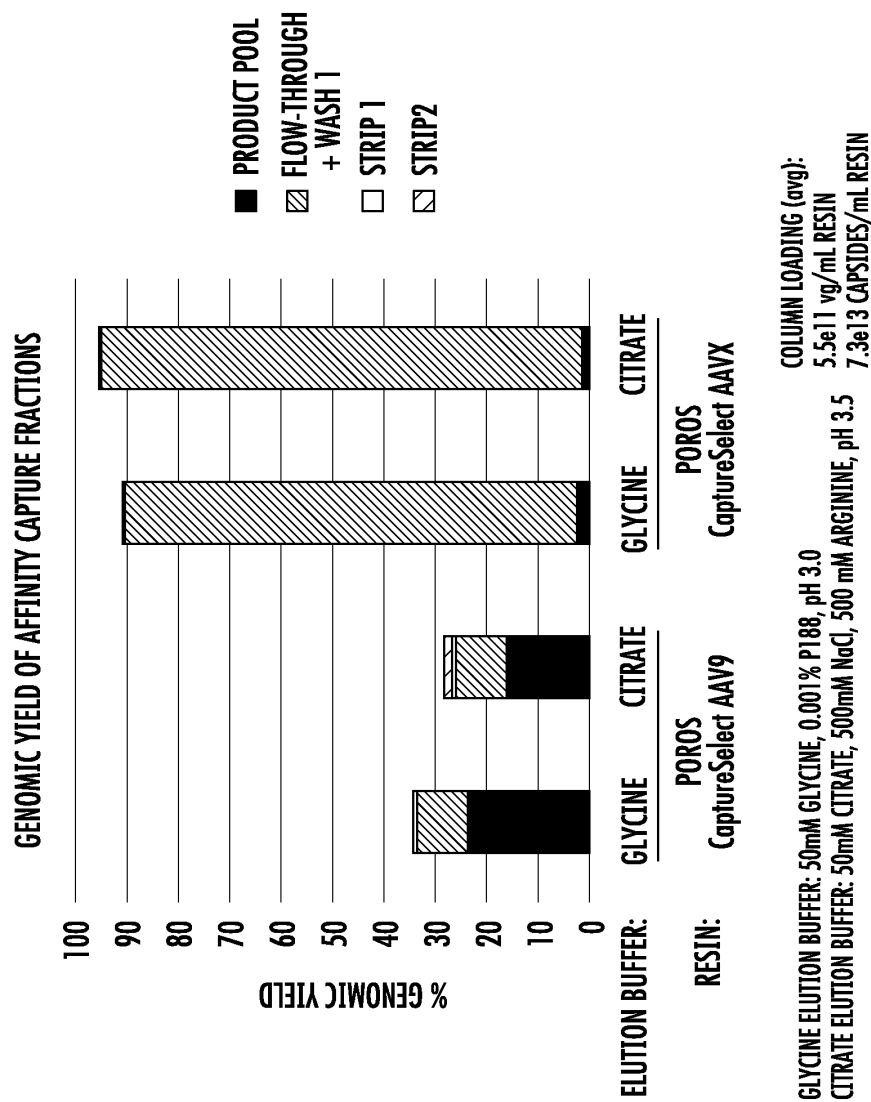


FIG. 9A

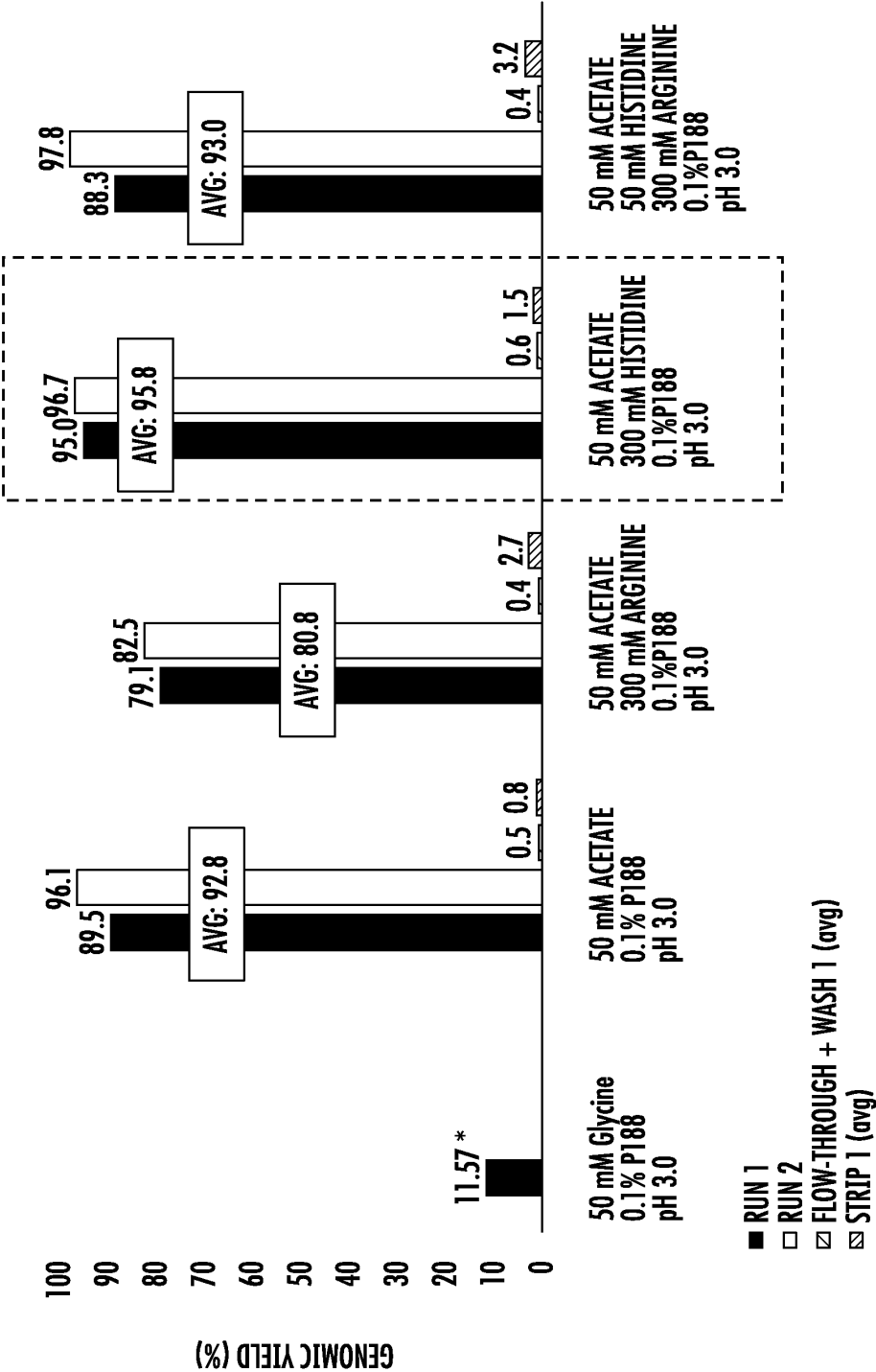


FIG. 9B

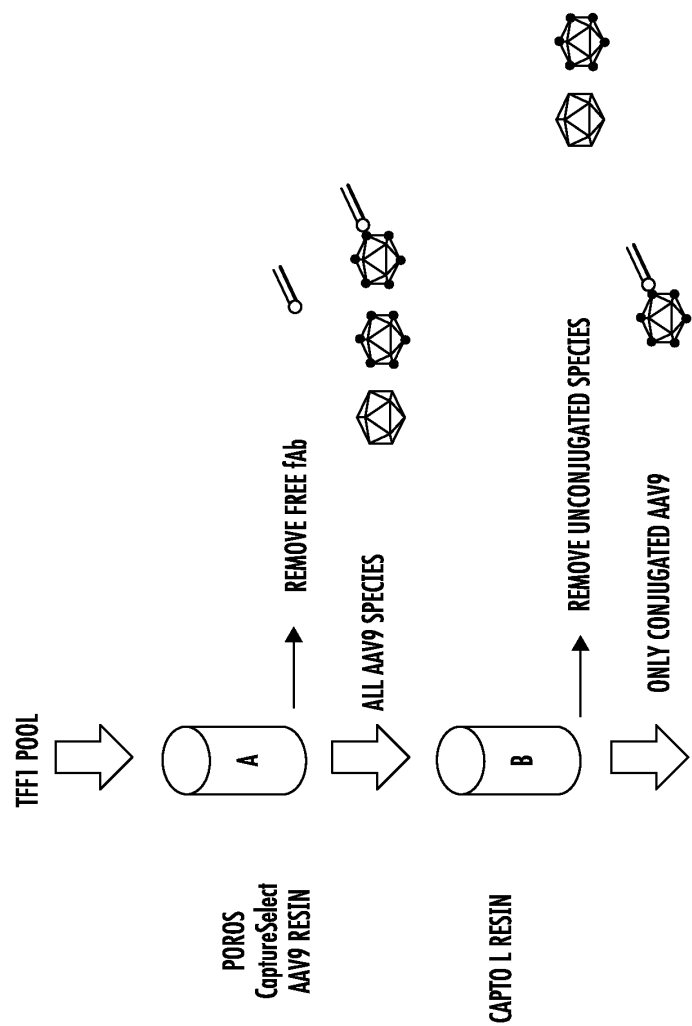


FIG. 10

DESCRIPTION		
LANE	SpyTag FRACTION	PERCENT CHANGE IN mAb DNA
1	1/5	0%
2	1/5	+50%
3	1/8	+50%
4	1/8	+100%
5	1/10	+100%
6	1/10	+200%
7	1/15	+200%
8	1/20	+200%
9	1/30	+200%
10	PBS	

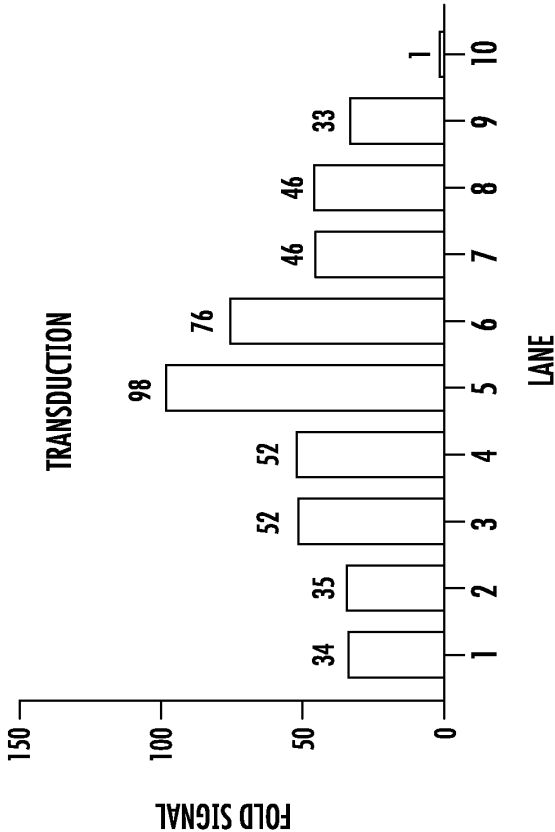


FIG. 11

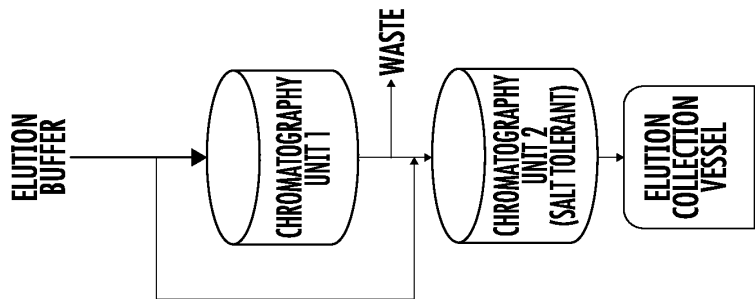


FIG. 12C

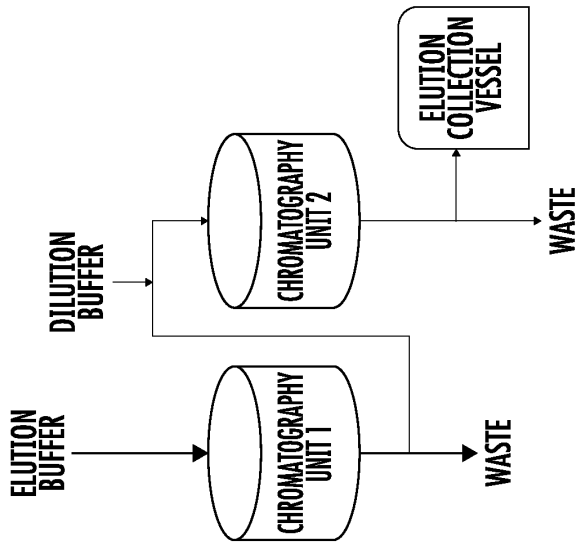


FIG. 12B

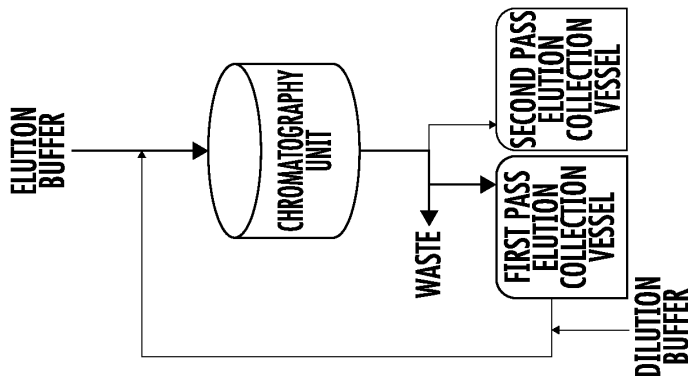


FIG. 12A

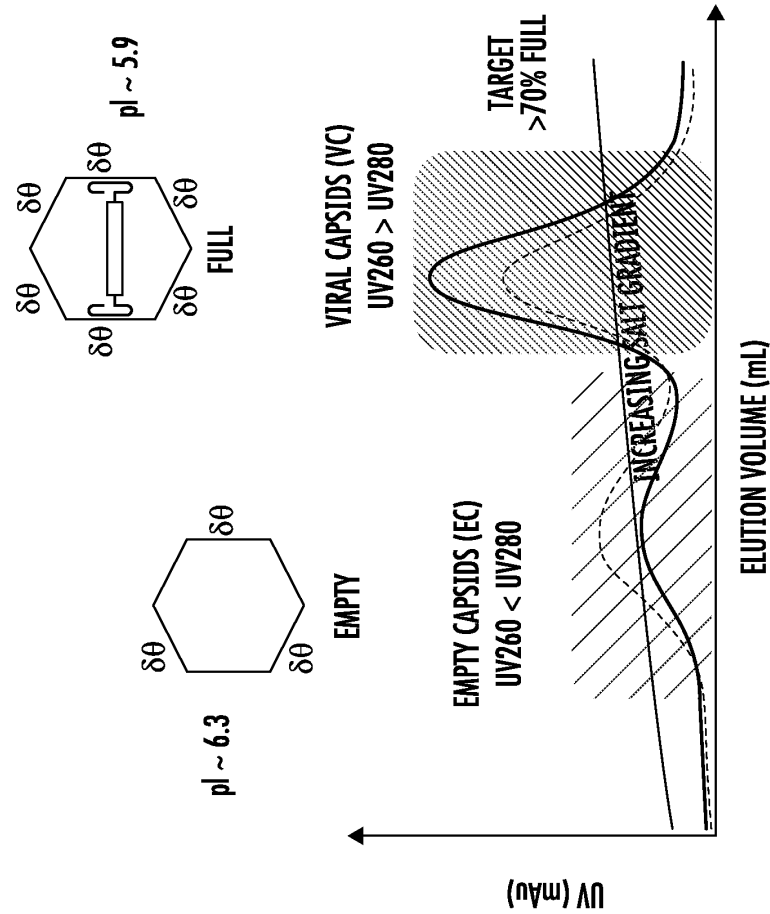


FIG. 12D

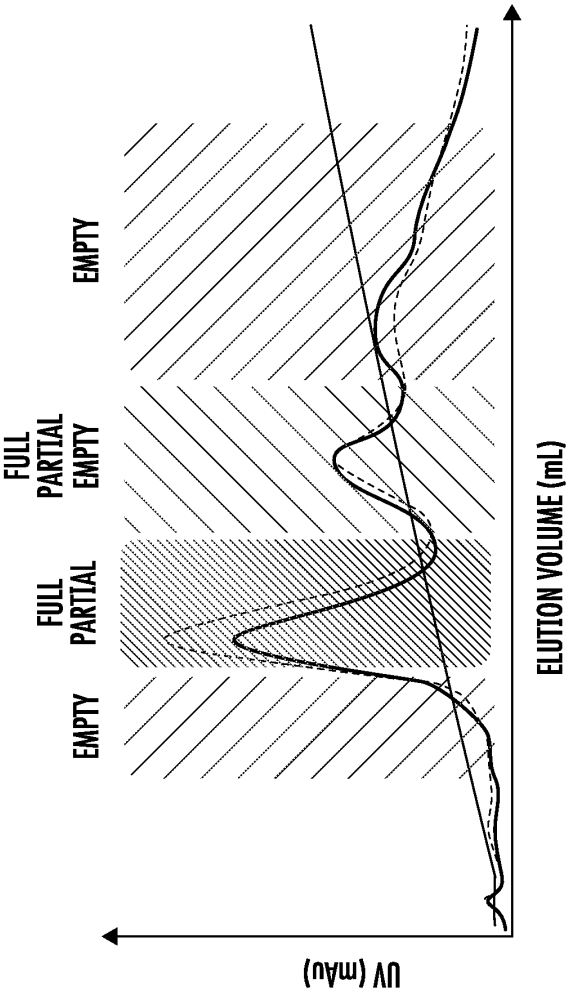


FIG. 12E

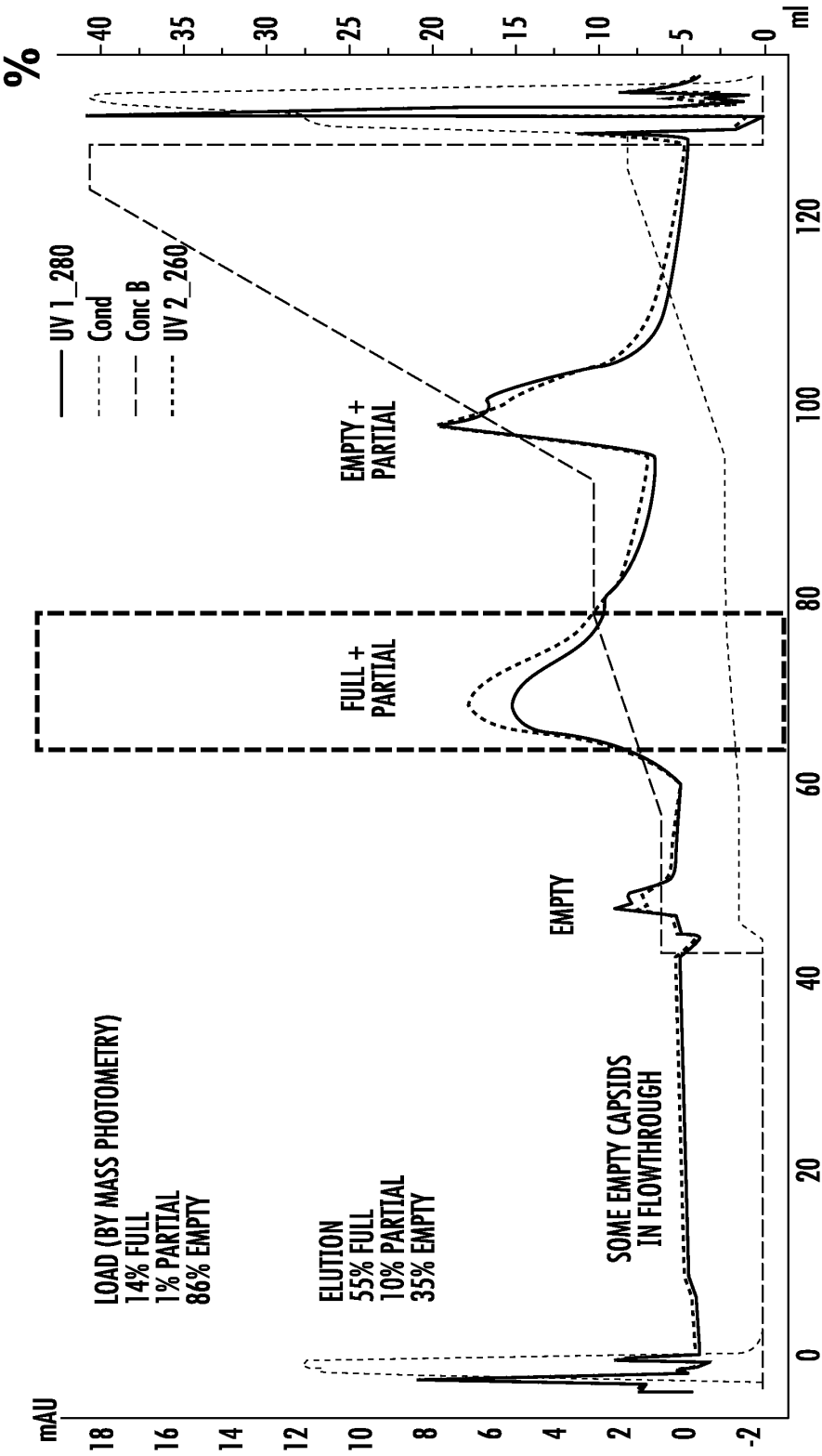


FIG. 12F

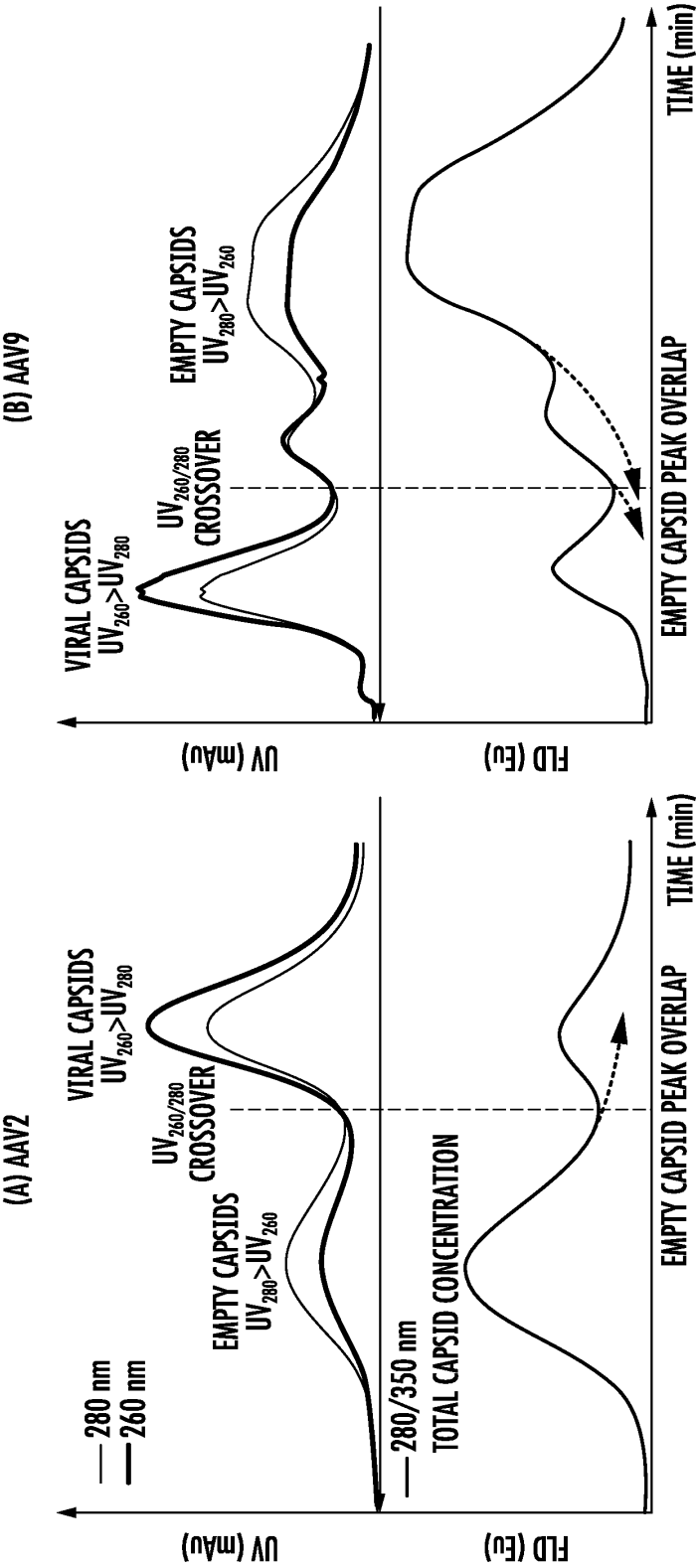


FIG. 12H

FIG. 12G

FIG. 13A

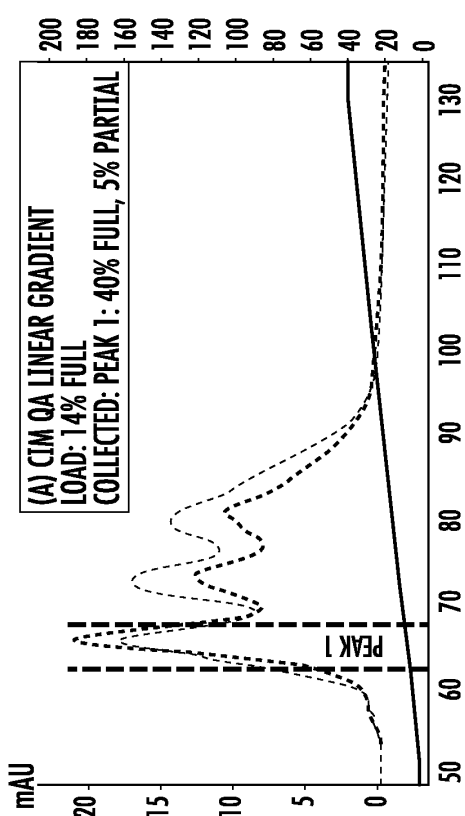


FIG. 13B

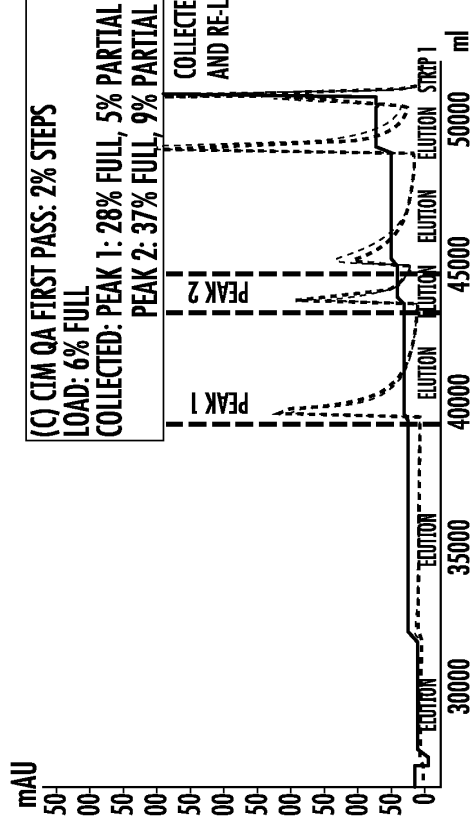
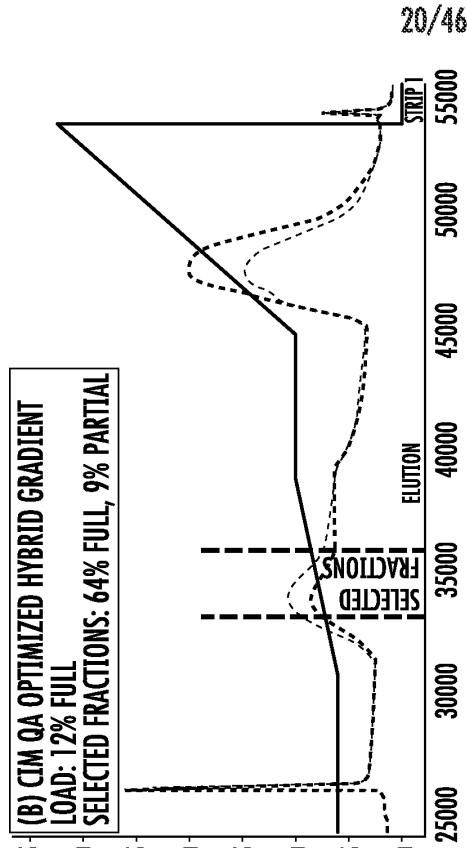


FIG. 13C

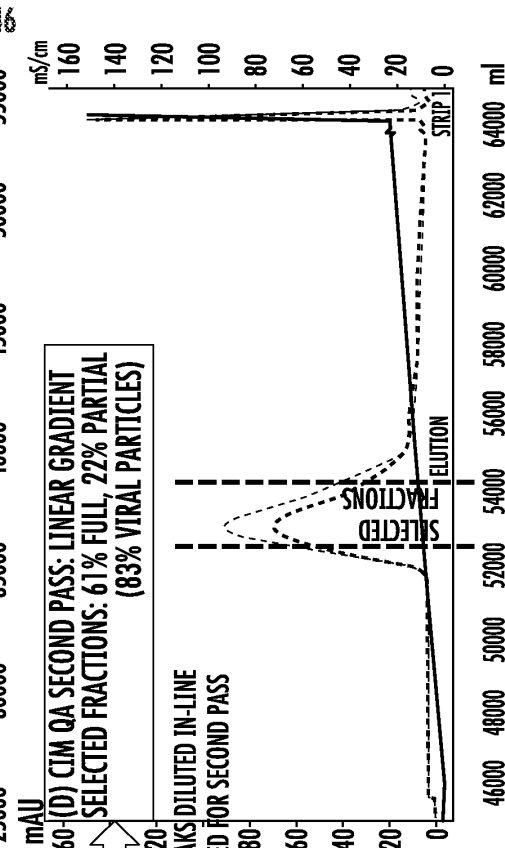
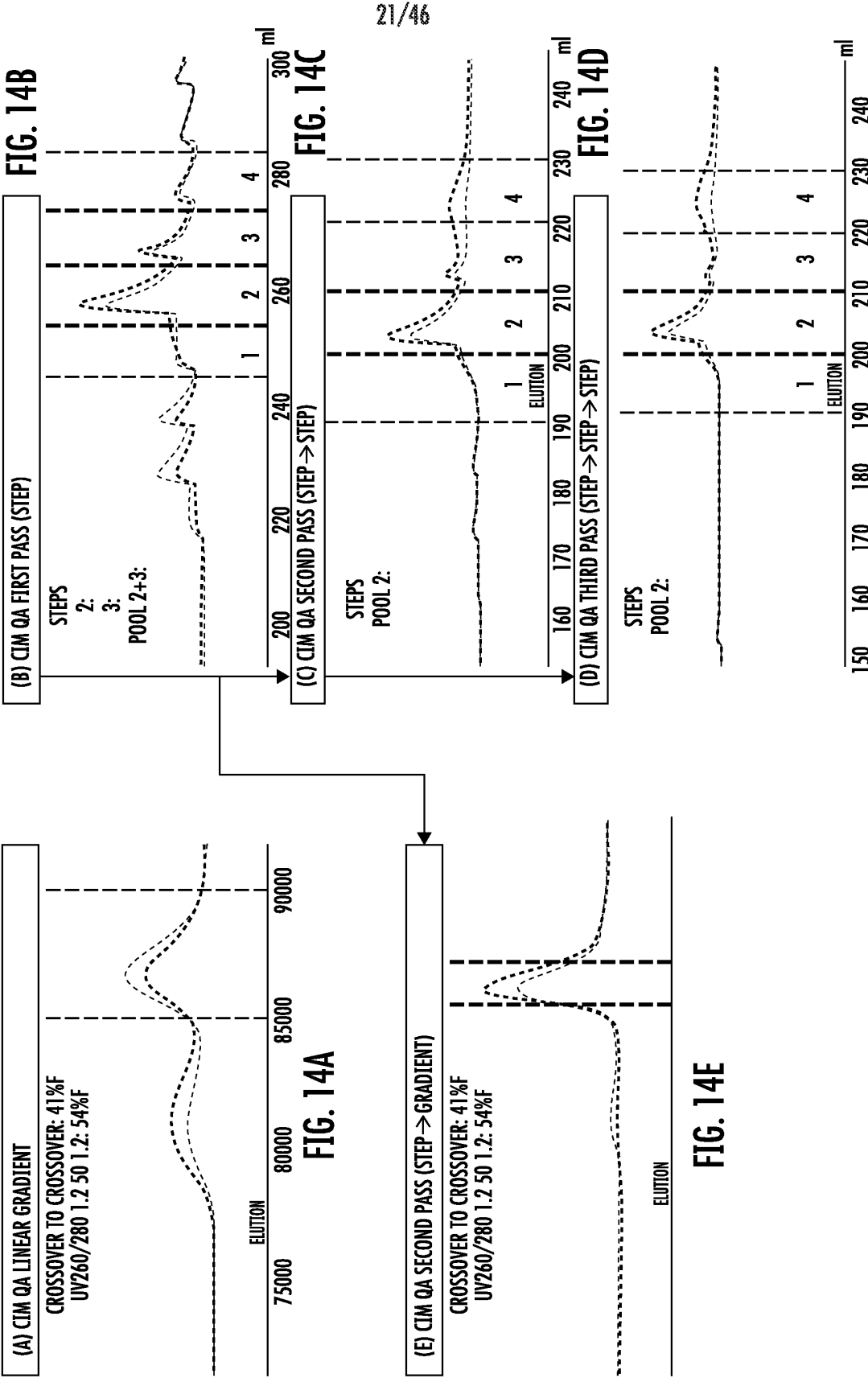
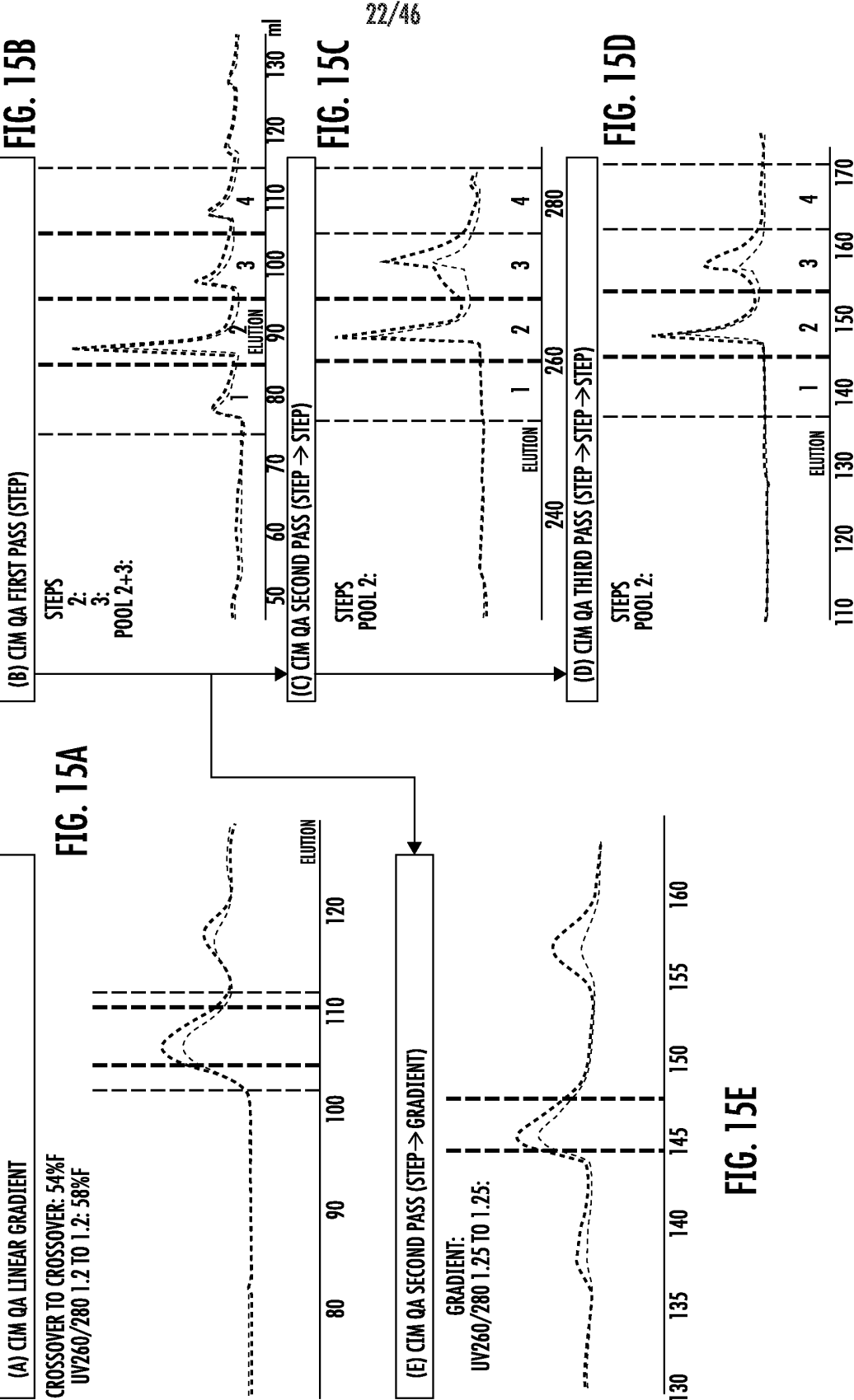
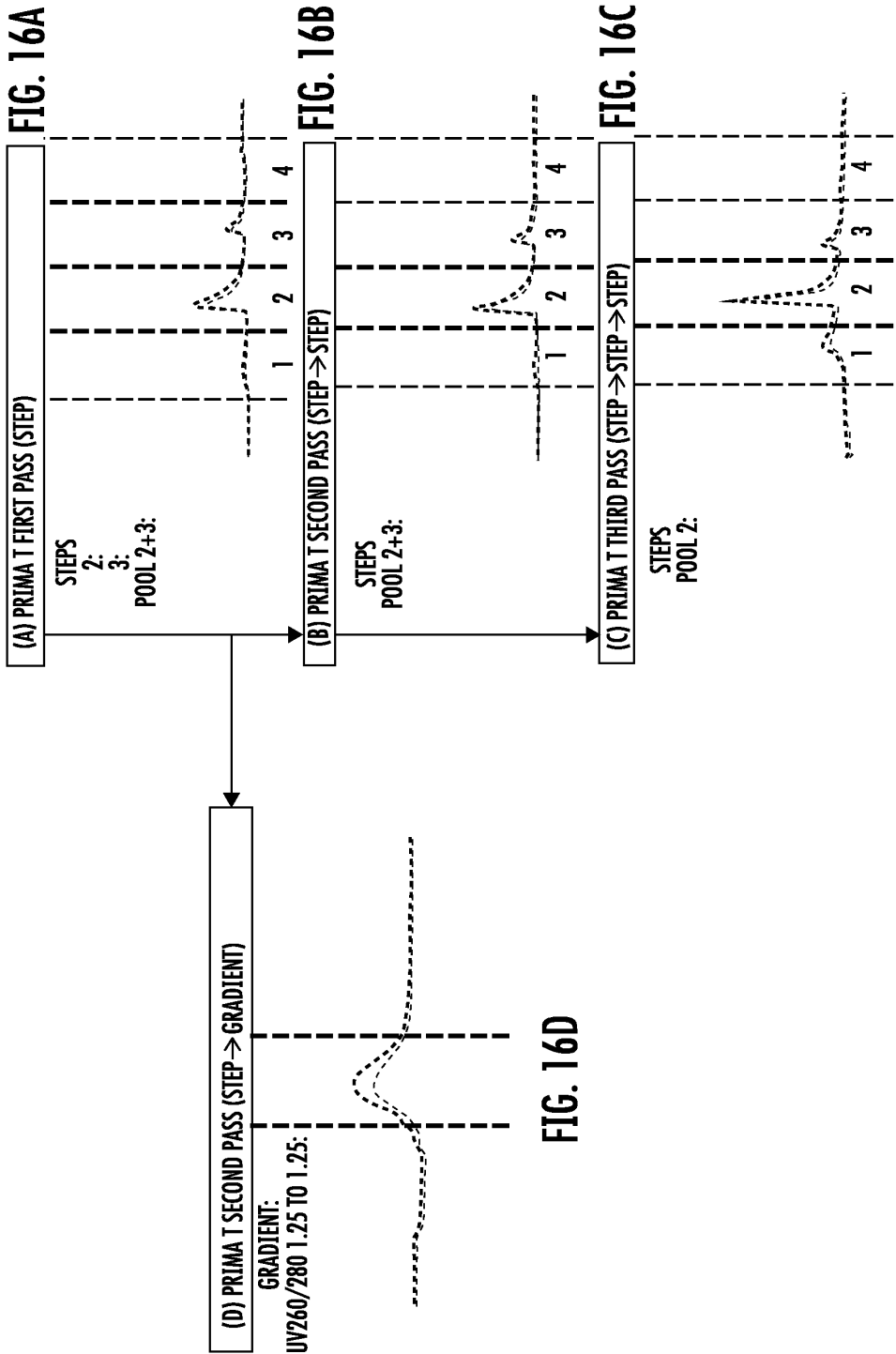


FIG. 13D







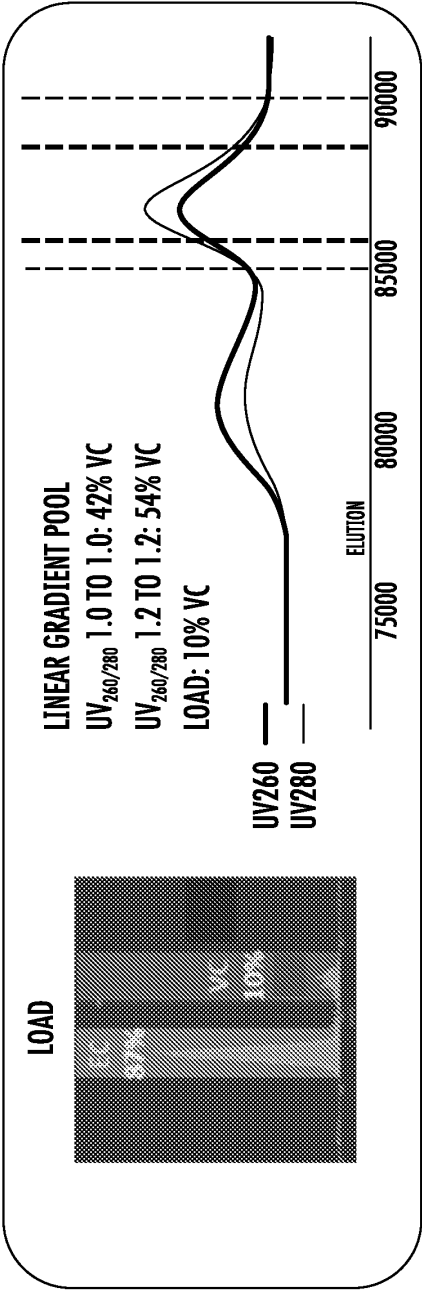


FIG. 17A

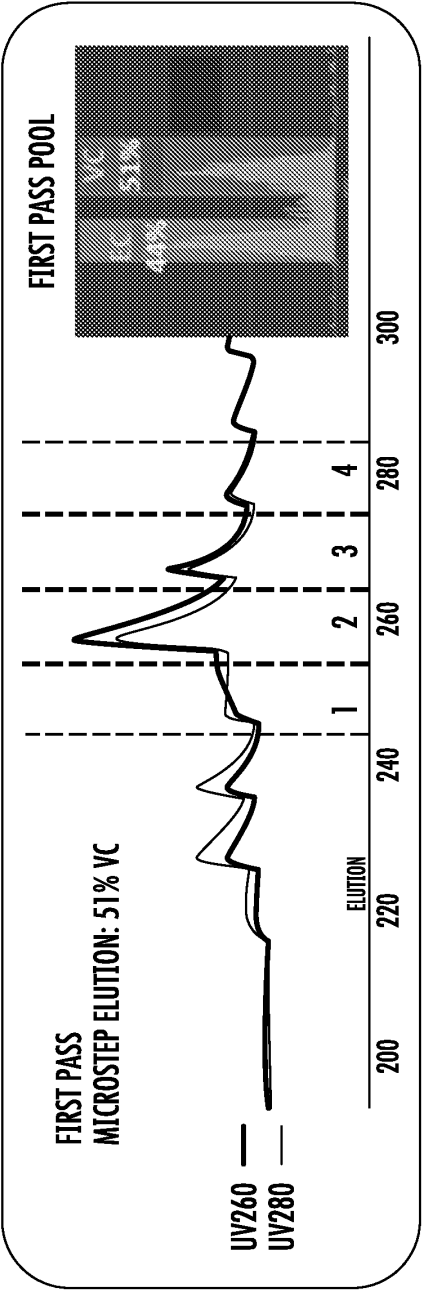


FIG. 17B

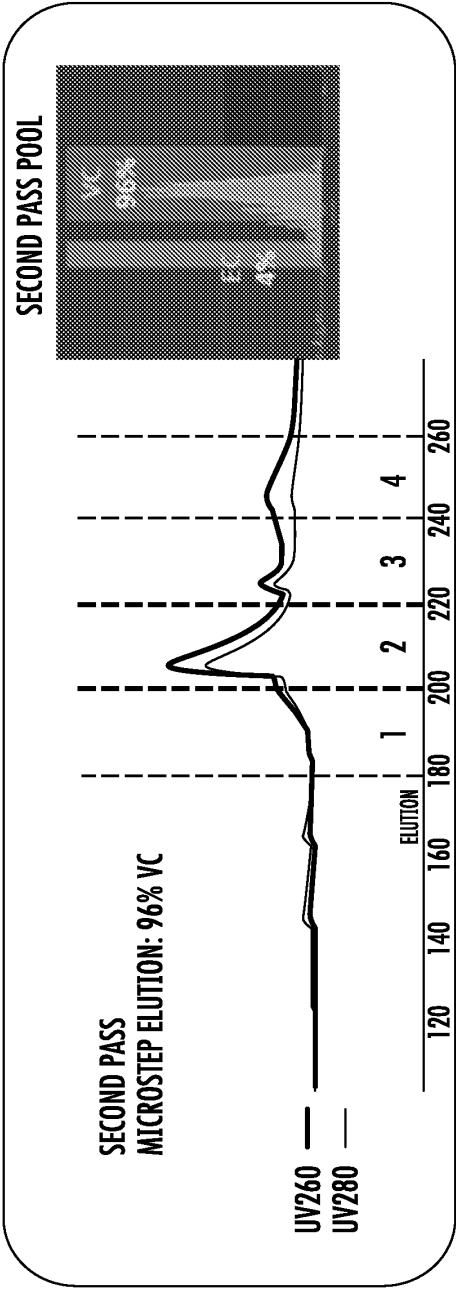


FIG. 17C

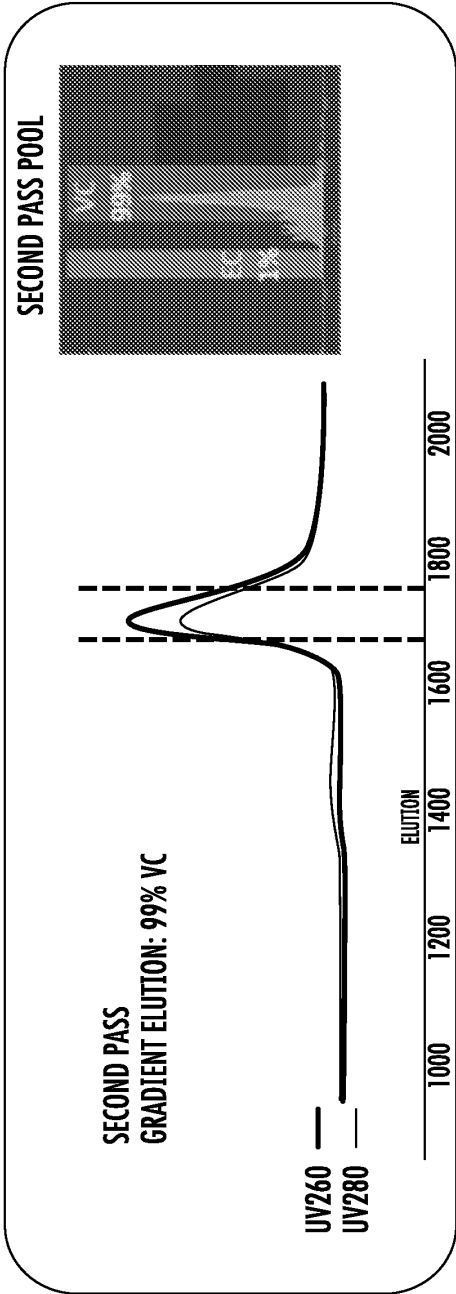


FIG. 17D

26/46

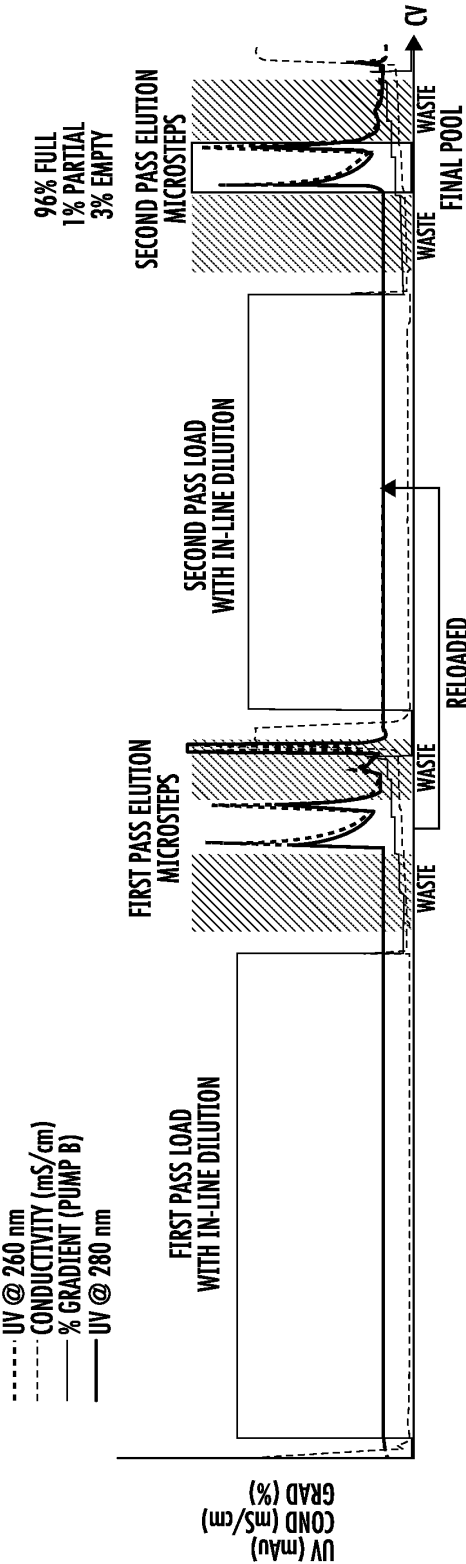


FIG. 18A

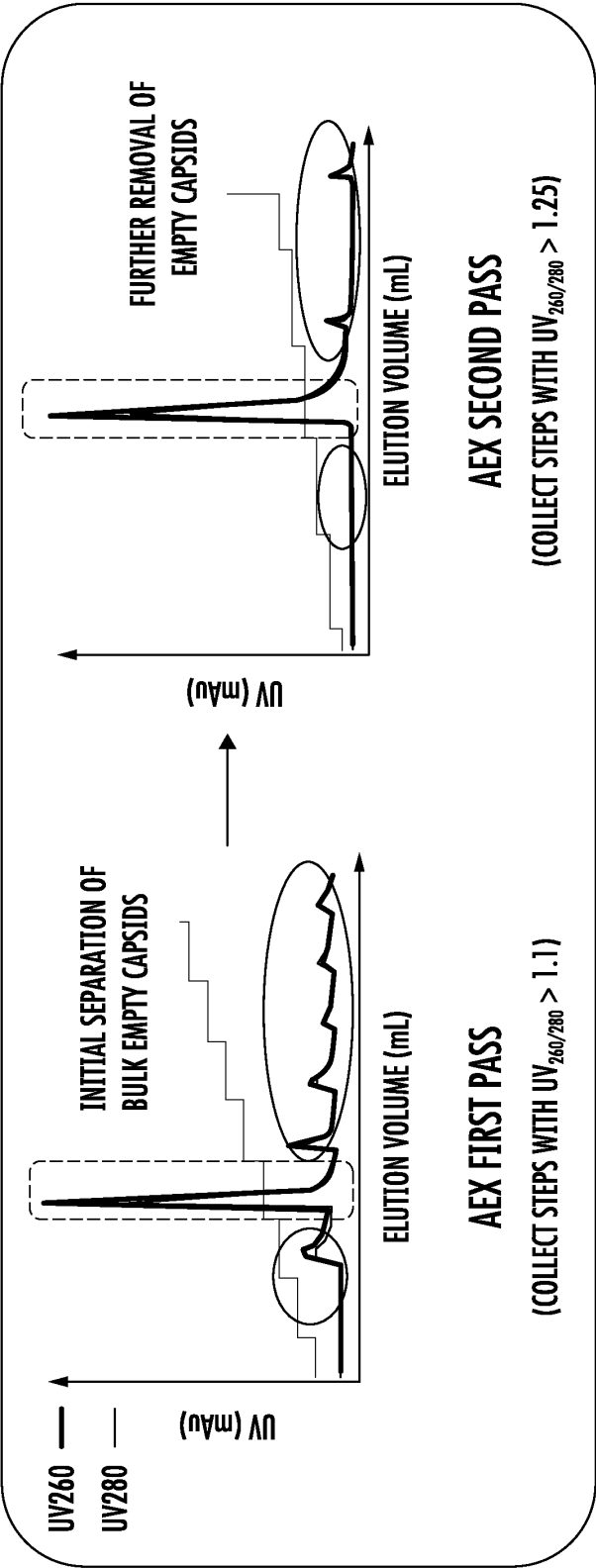


FIG. 18B

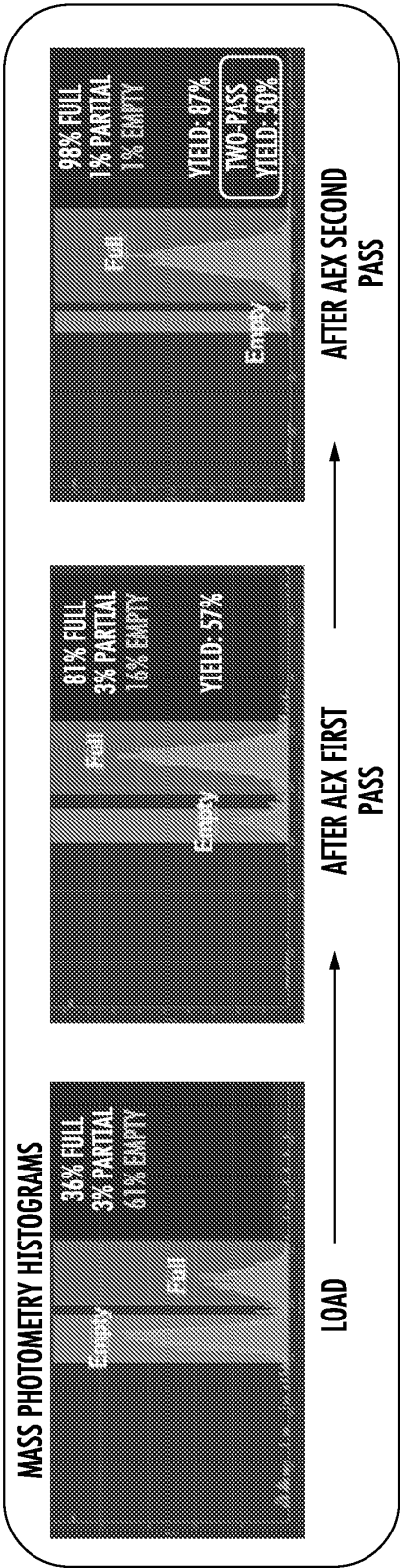


FIG. 18C

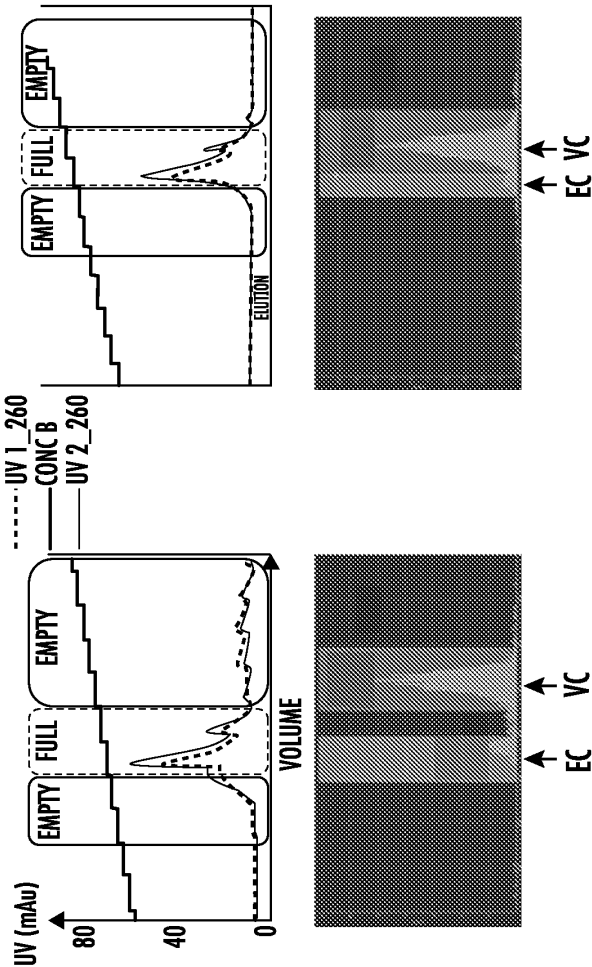


FIG. 18D

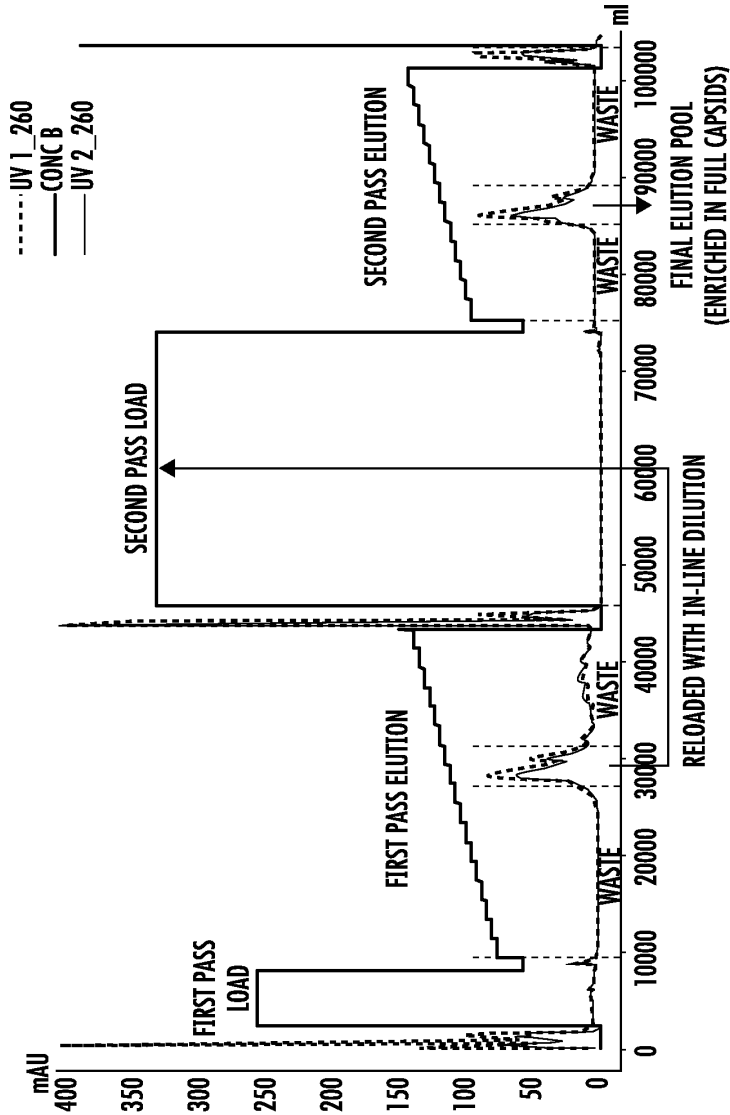


FIG. 18E

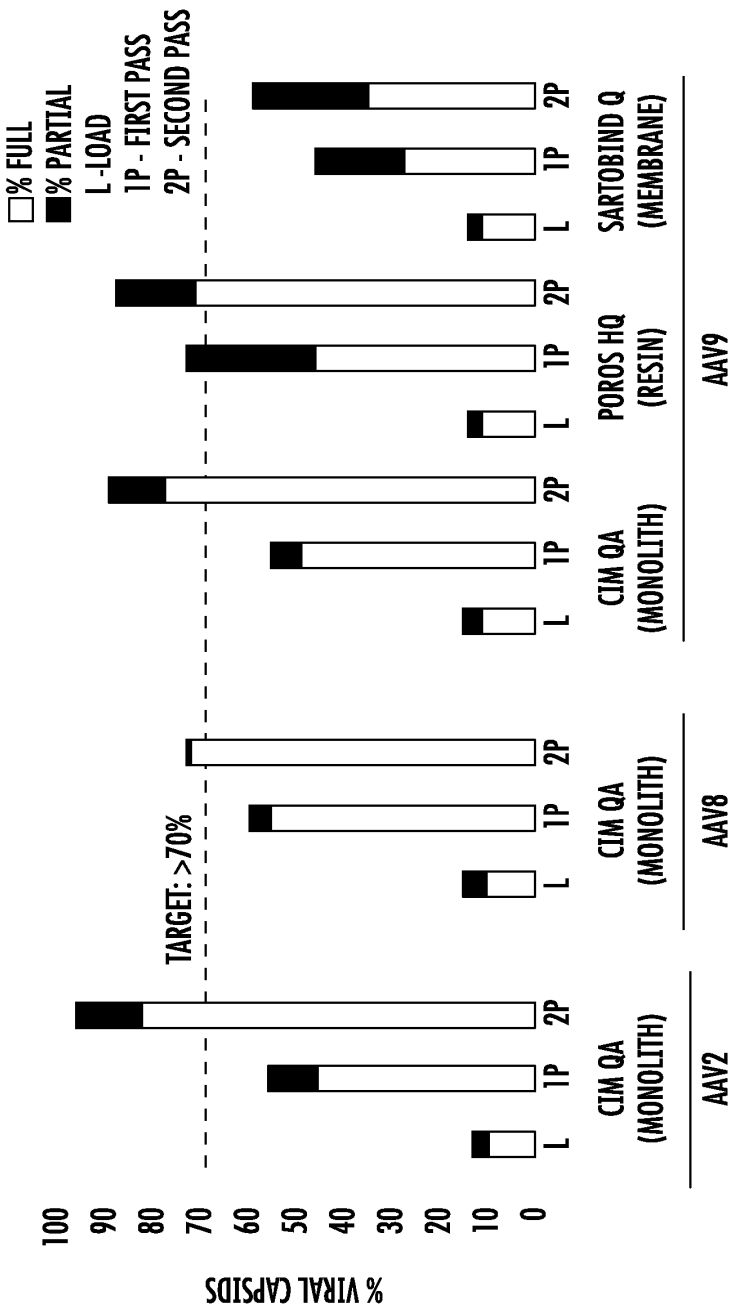


FIG. 19

STEP	CVs (ALL STEPS AT 1 MIN RT)	INLETS	GRADIENT	OUTLET
PRE-STRIP	3 CV	A5, B1	0%	WASTE
EQUILIBRATION 1	3 CV	A1, B1	0%	WASTE
LOAD 1	AS NEEDED	A2, B1	0%	OUT-1
WASH 1	3 CV	A1, B1	0%	OUT-1
ELUTION 1	15 CV X 4 STEPS	A1, B2	6%, 8%, 10%, 12%	OUT-2 IF UV260>UV280, ELSE OUT-1 *A3 INLET PLACED IN OUT-2 COLLECTION VESSEL
STRIP 1 = PRE-STRIP 2	3 CV	A5, B1	0%	WASTE
EQUILIBRATION 2	3 CV	A1, B1	0%	WASTE
LOAD 2	AS NEEDED	A3, B1	90% *FOR IN-LINE DILUTION	OUT-1
WASH 2	3 CV	A1, B1	90% *IN SAME DILUTION	OUT-1
ELUTION 2	15 CV X 4 STEPS OR 20 CV LINEAR GRADIENT	A1, B2	4-12% B	OUT-3 IF UV260/U80>1.25, ELSE OUT-1
STRIP 2	3 CV	A5, B1	0%	WASTE
EQUILIBRATION 2	3 CV	A1, B1	0%	WASTE

BASE GRADIENT PHASE (BLOCK)
PRE STRIP (PRE-STRIP)
1.36 0.00

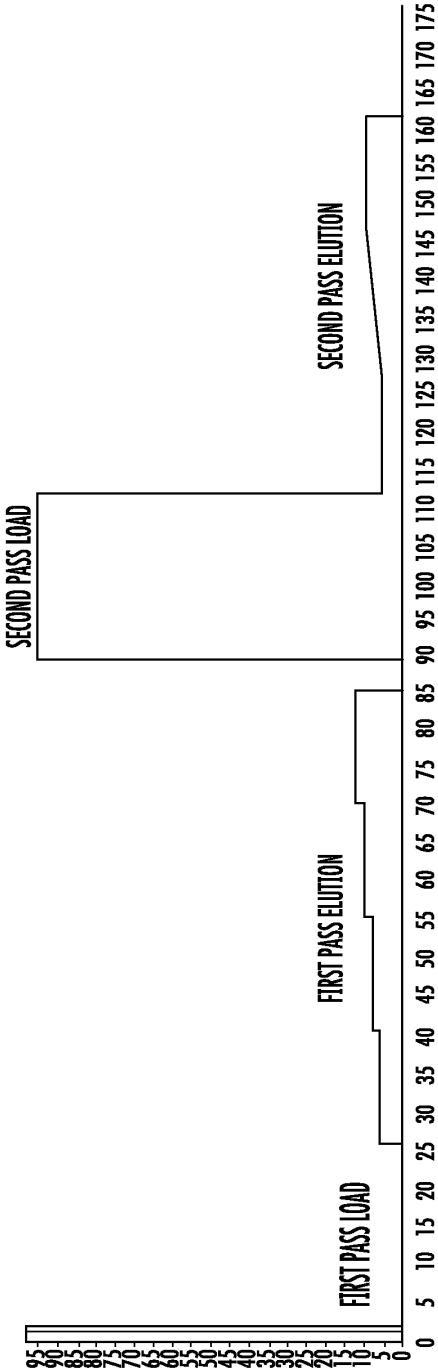
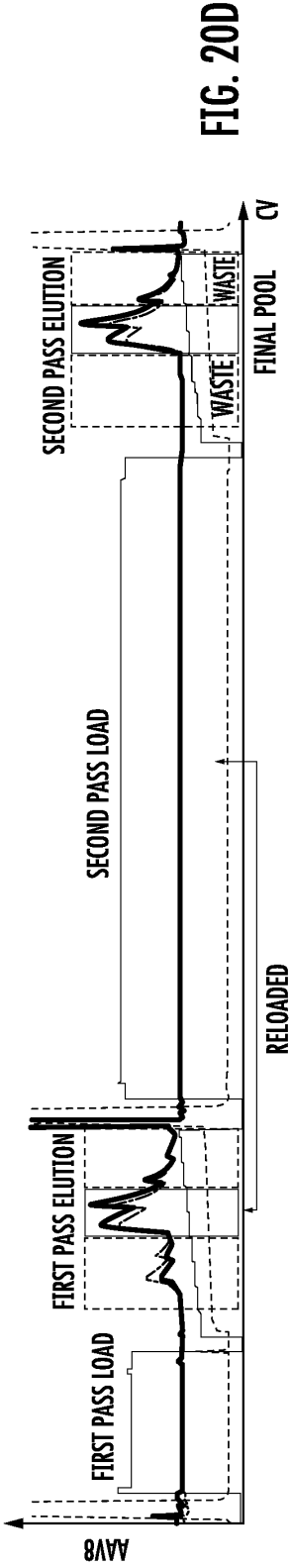
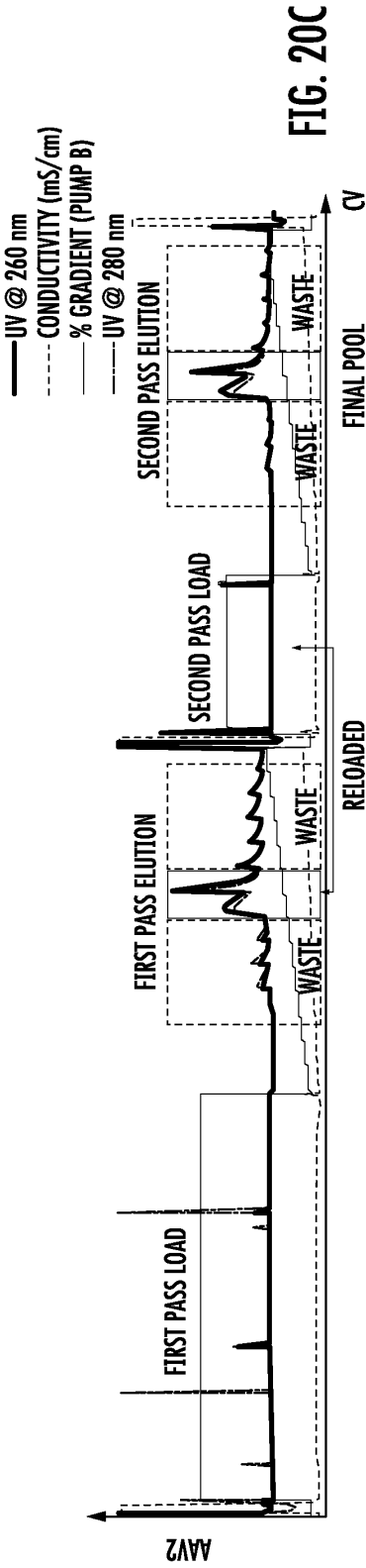
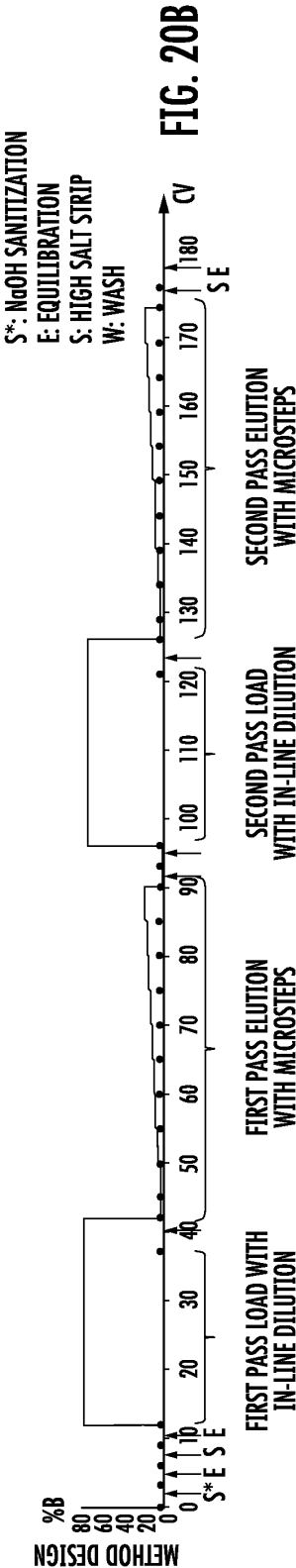


FIG. 20A



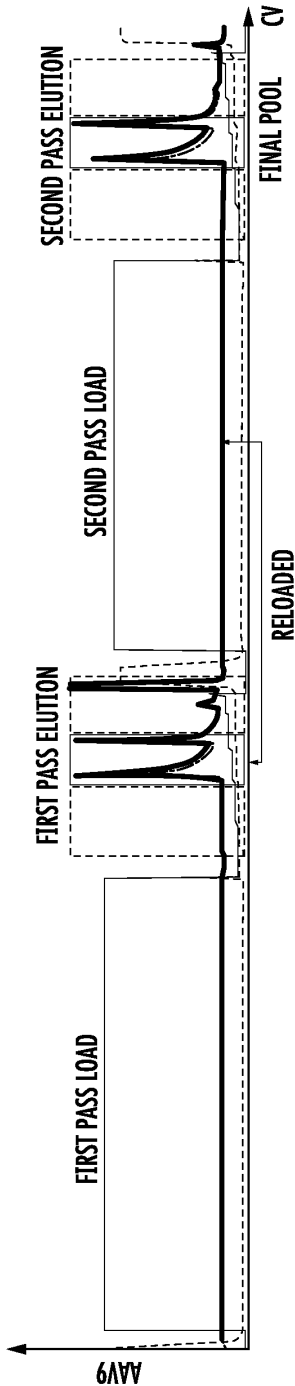


FIG. 20E

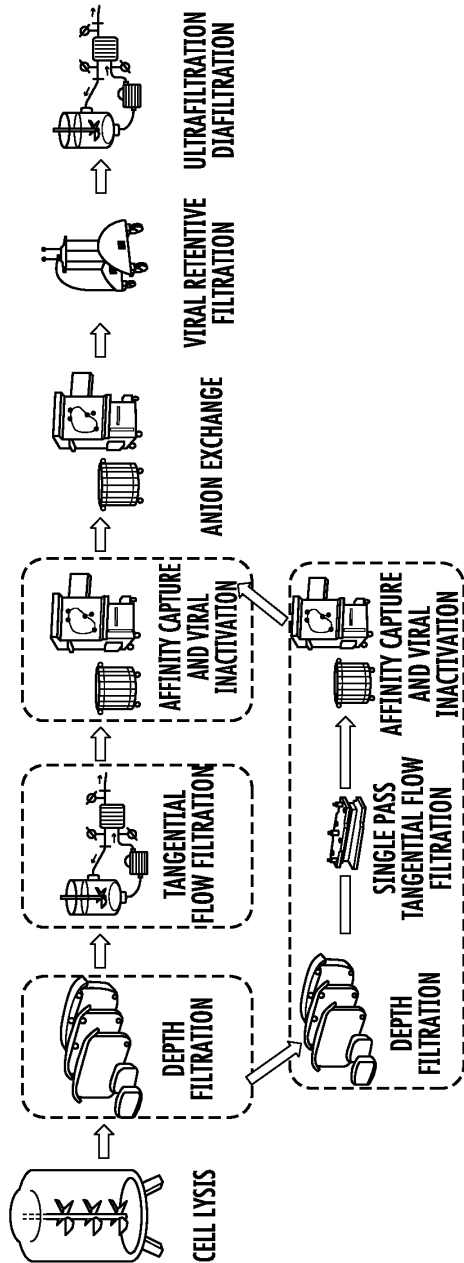
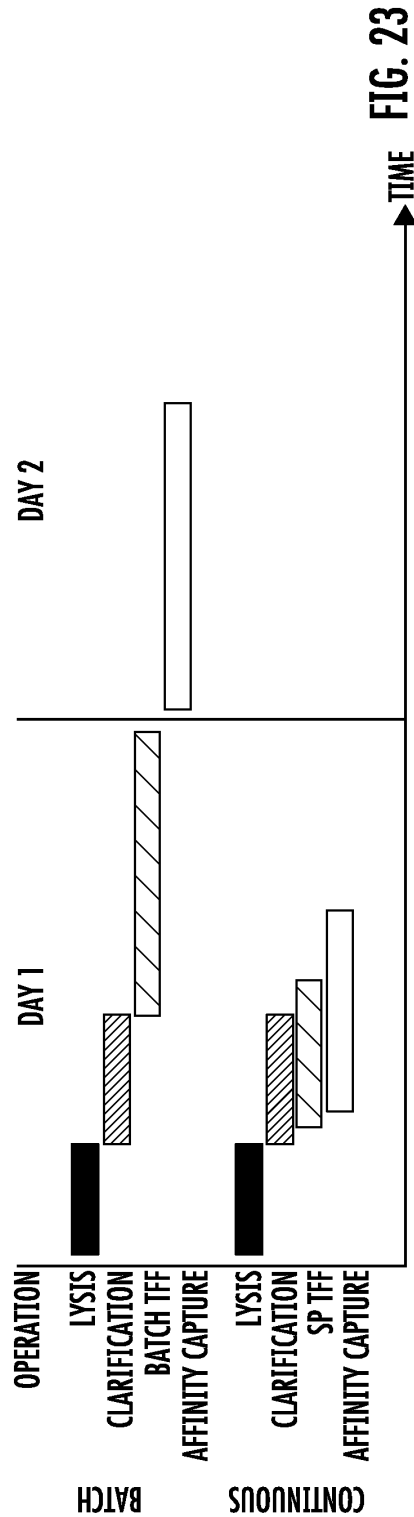
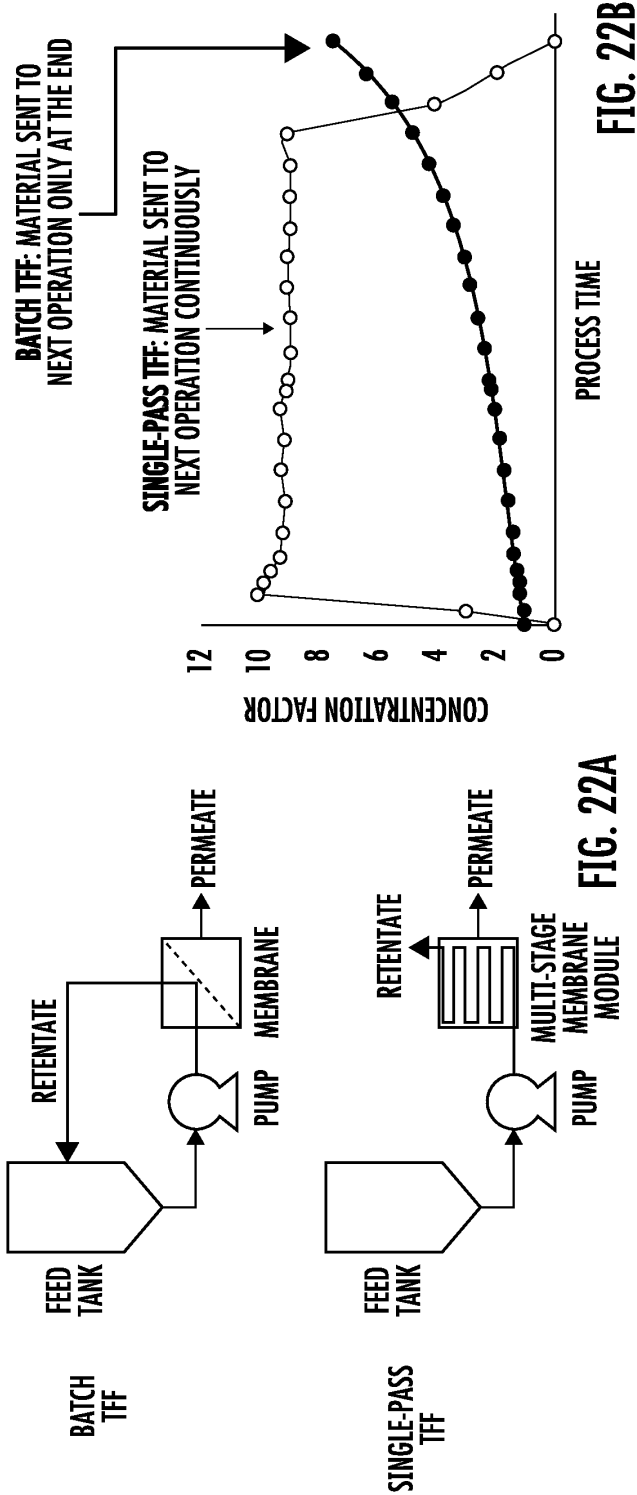


FIG. 21



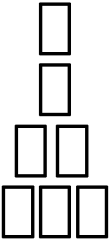
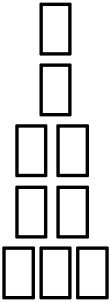
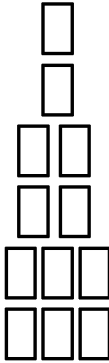
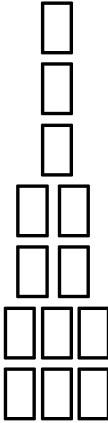
CONFIGURATION WITH SCHEMATIC	TOTAL AREA (m ²) [186 cm ² CASSETTES]	PATH LENGTH (cm) [20 x 9.1 cm CASSETTES]
4-IN-SERIES 	0.13	80
5-IN-SERIES 	0.17	100
6-IN-SERIES 	0.22	120
7-IN-SERIES 	0.24	140

FIG. 24

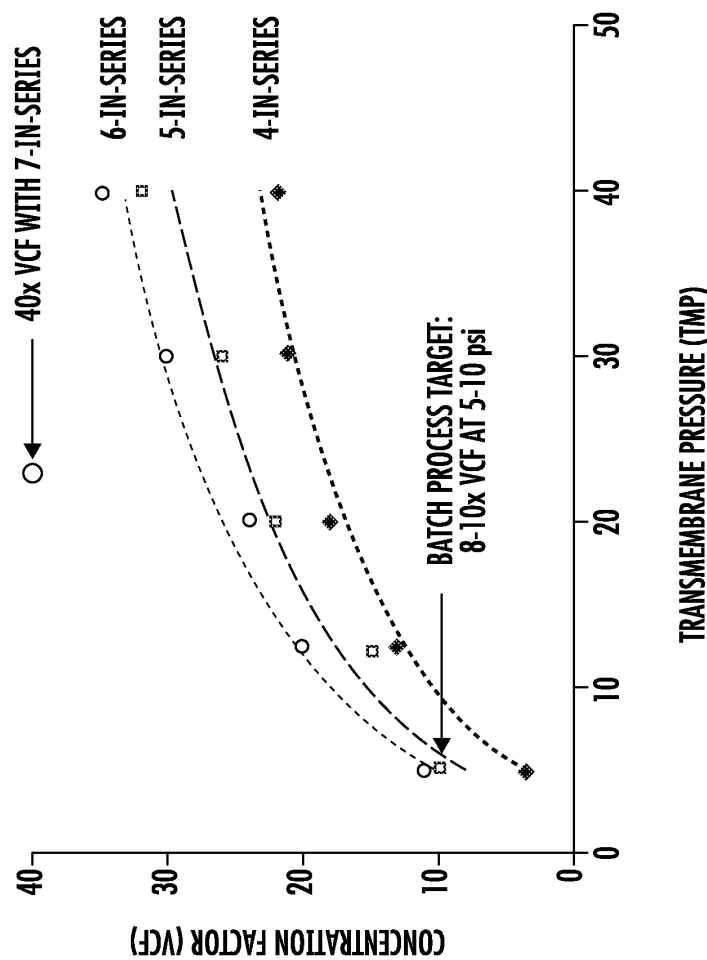


FIG. 25

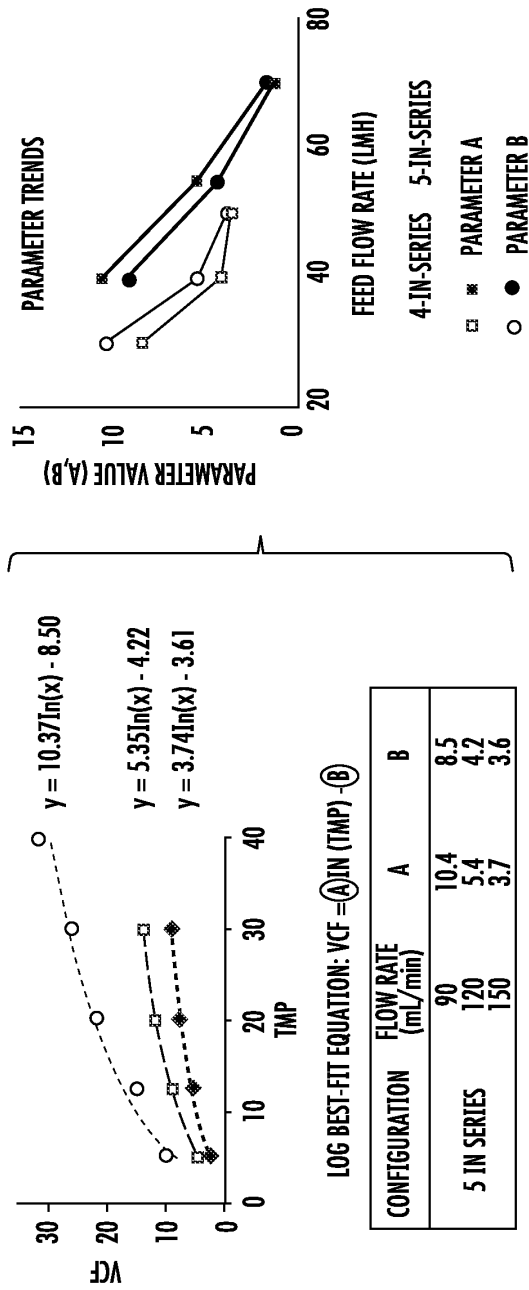


FIG. 26

VCF: VOLUMETRIC CONCENTRATION FACTOR
TMP: TRANSMEMBRANE PRESSURE

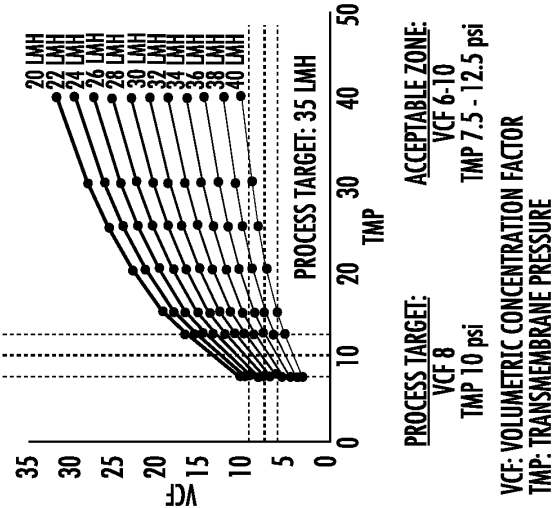


FIG. 27A

PROCESS PARAMETER	SPTFF	BATCH TFF
MEMBRANE UNITS	9	1
AREA PER MEMBRANE UNIT (m ²)	0.1	1.5
TOTAL MEMBRANE AREA (m ²)	0.9	1.5
FEED FLOW RATE (LMH)	35	40
FEED FLOW RATE (mL/min)	525	600
TIME TO PROCESS 50 L BATCH (min)	95*	180
LOADING FOR 50 L BATCH (L/m ²)	55	40

*EFFECTIVE SPTFF TIME IS ONLY ~ 10 MIN DUE TO CONTINUOUS OPERATIONS

FIG. 27B

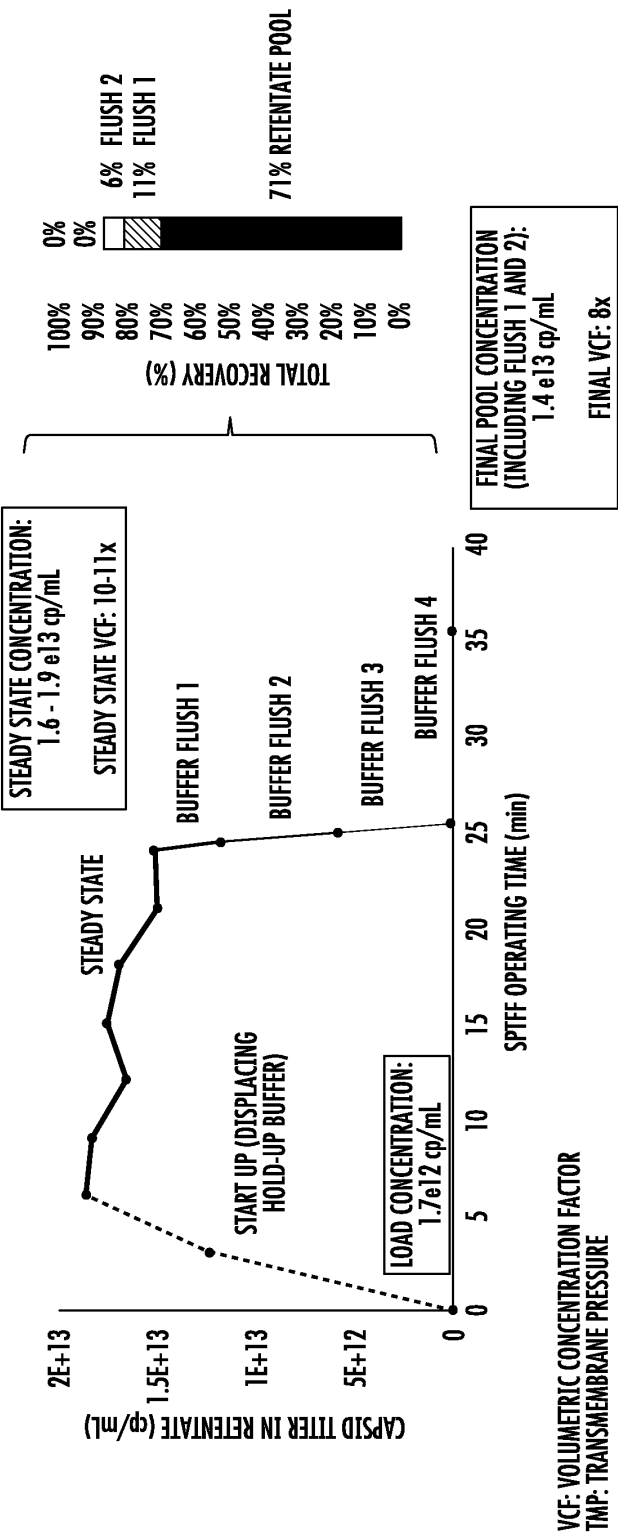


FIG. 28

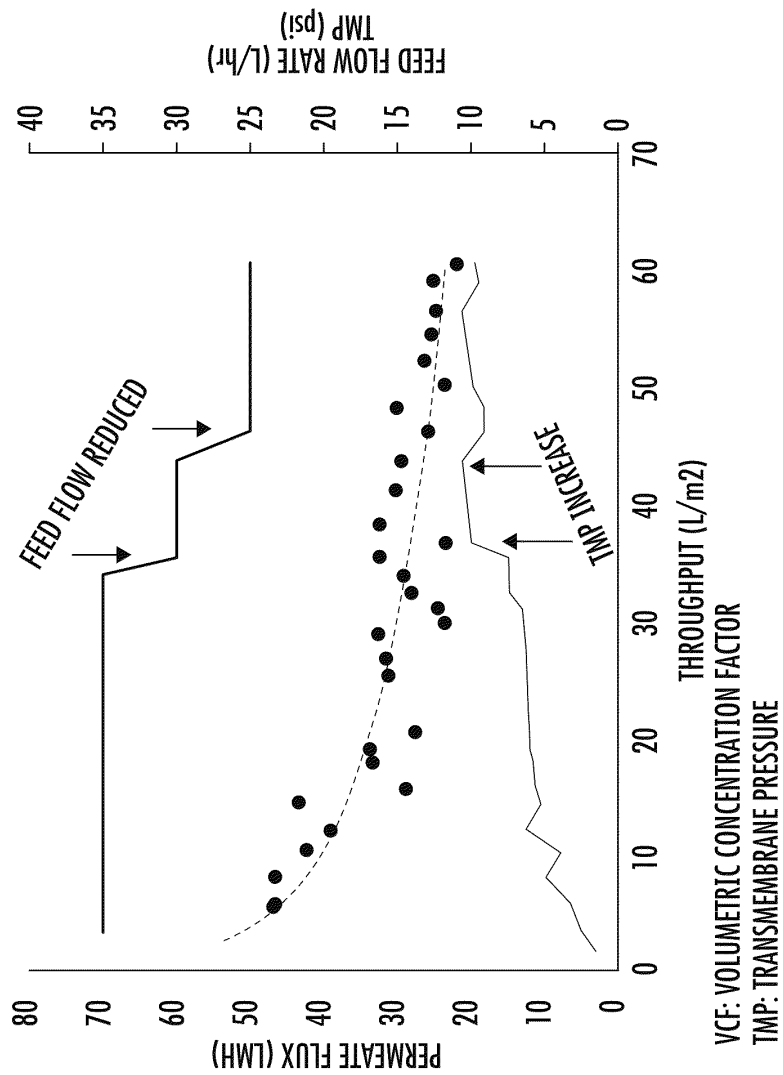
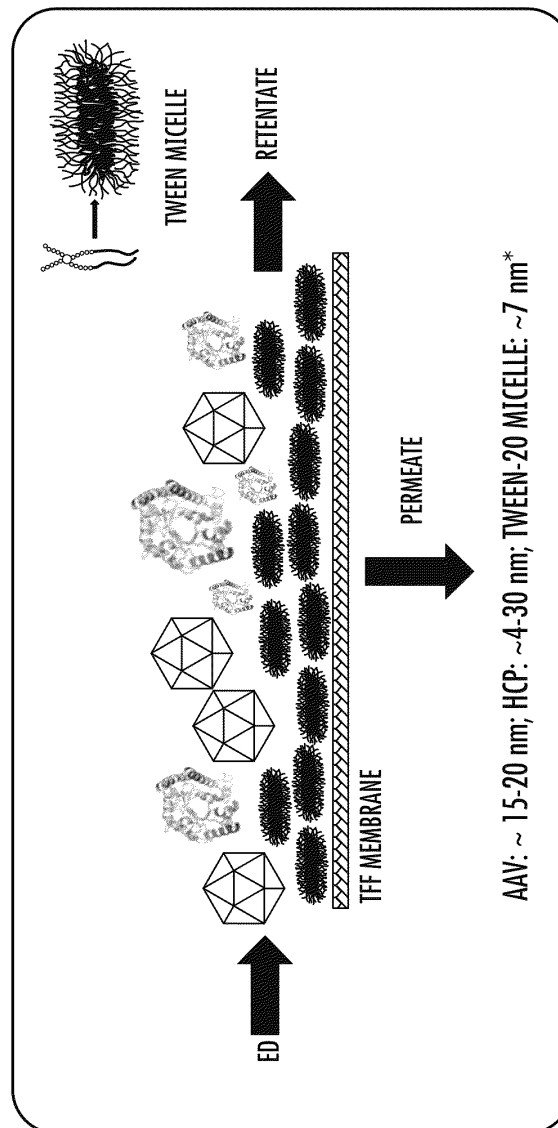


FIG. 29



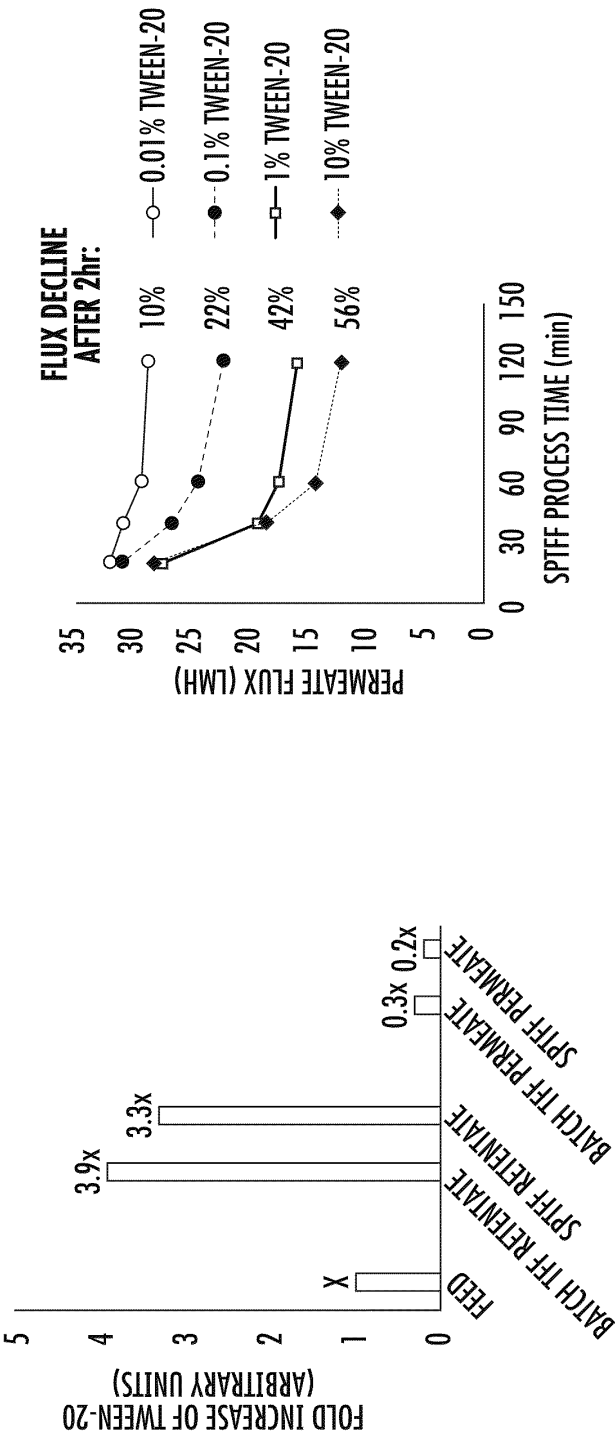


FIG. 32

FIG. 31

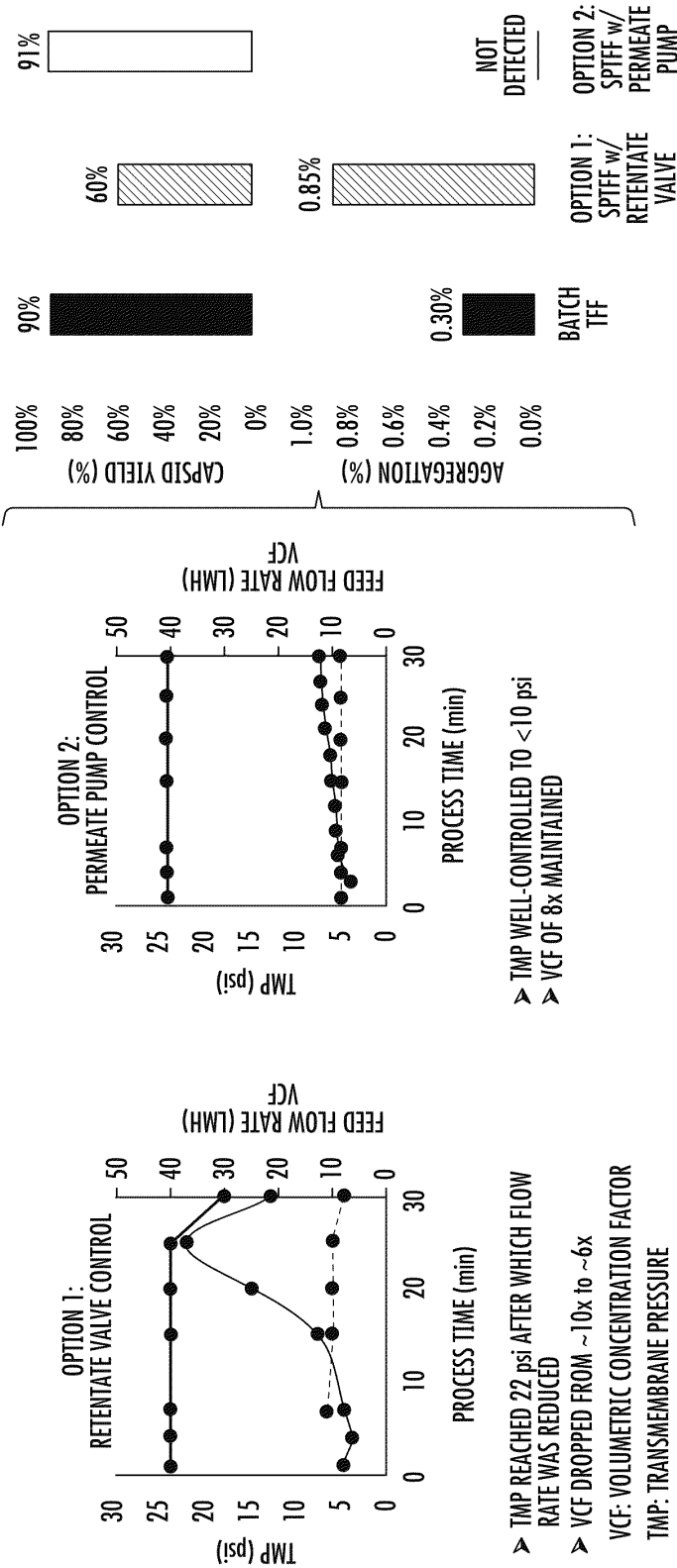


FIG. 33

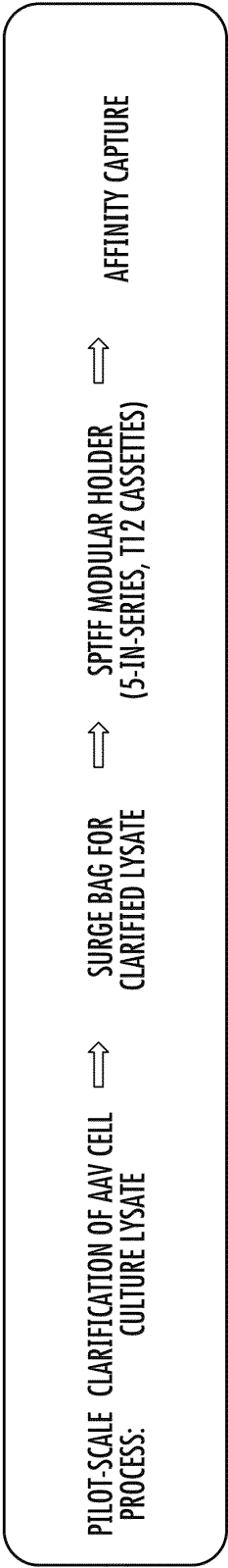


FIG. 34

VCF	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SPTFF RETENTATE FLOW RATE (mL/min)	525	263	175	131	105	88	75	66	58	53	48	44	40	38
RESIDENCE TIME IN AFFINITY CAPTURE (min)	0.4	0.8	1.1	1.5	1.9	2.3	2.7	3.1	3.4	3.8	4.2	4.6	5.0	5.3

AN EXEMPLARY RANGE OF RESIDENCE TIME FOR AFFINITY LOADING

FIG. 35

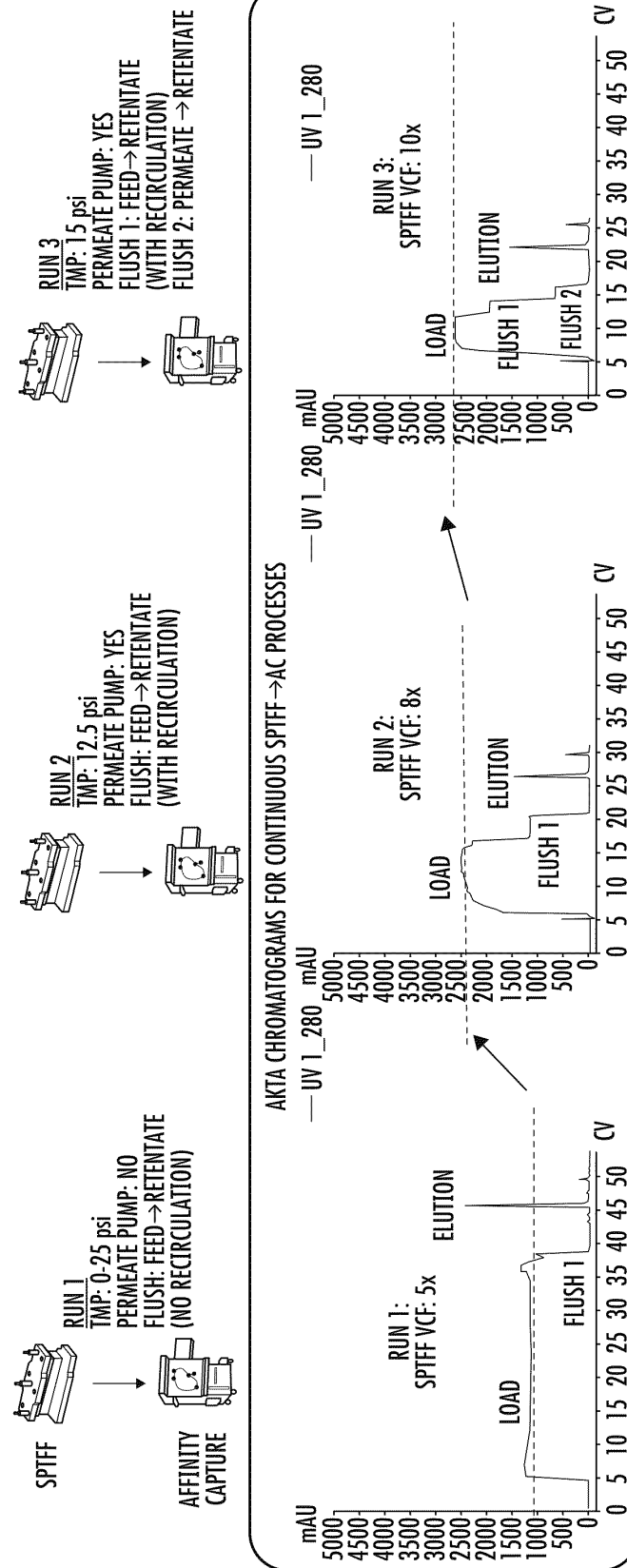


FIG. 36