

Sinclair Nanopig™

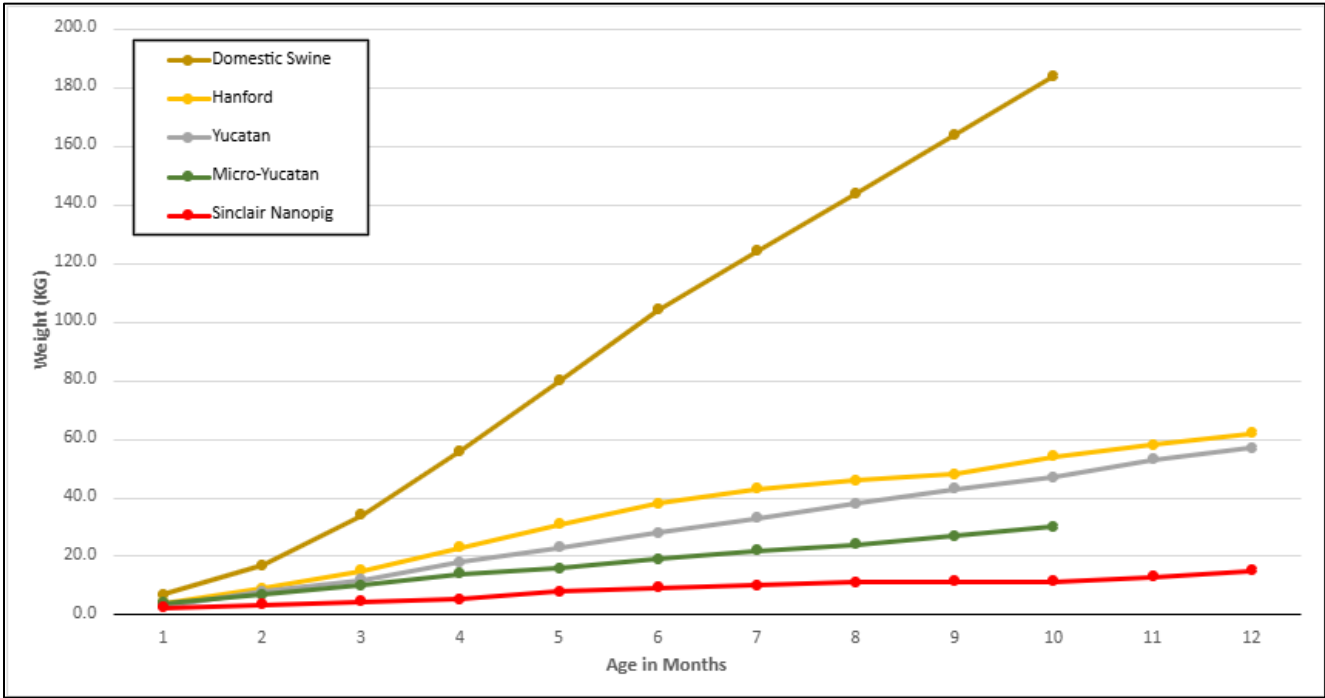
2024 Addendum

Sinclair Bio Resources
Miniature Swine Book of Normals



Body Weights

Sinclair Nanopig™ Body Weight Comparison



Lineage/Age	2 Months	4 Months	6 Months	8 Months	10 Months	12 Months
Sinclair Nanopig	2-4	5-7	9-11	11-12	12-14	13-15
Sinclair S-1	7-9	14-17	19-23	26-29	32-36	37-42
Micro-Yucatan	6-8	13-14	18-20	23-25	29-31	35-40
Yucatan	7-9	16-20	26-30	36-40	46-50	55-60
Hanford	8-11	20-27	34-42	44-48	51-56	60-70

Hematology/Chemistry

Sinclair Nanopig™ Hematology 2-3 Months

Parameters	Male 2-3 Months (n=54)				Female 2-3 Months (n=46)			
	Mean	SD	95% Reference Range		Mean	SD	95% Reference Range	
WBC ($10^3/\mu\text{L}$)	14.5	2.9	9.0	19.8	14.2	2.4	10.2	18.3
RBC ($10^6/\mu\text{L}$)	7.7	0.8	6.2	9.1	7.9	0.7	6.5	9.2
Hgb (g/dL)	14.3	1.3	11.8	16.6	14.5	1.0	12.5	16.0
HCT (%)	43.3	3.8	36.2	50.7	43.3	3.2	37.1	48.9
MCV (fL)	56.4	3.4	49.9	62.1	55.5	1.9	52.3	59.3
MCH (pg)	18.5	1.0	16.4	20.1	18.5	0.8	16.8	19.9
MCHC (g/dL)	32.9	0.8	31.4	34.4	33.3	0.8	31.8	34.6
PLT ($10^3/\mu\text{L}$)	564.4	128.3	351.4	826.5	562.6	113.4	335.4	771.5
NEU ($10^3/\mu\text{L}$)	3.4	1.5	0.5	6.2	2.8	1.3	0.1	5.3
NEU (%)	24.2	9.8	3.9	42.7	21.3	6.8	10.9	36.0
LYM ($10^3/\mu\text{L}$)	9.4	2.5	4.1	13.9	10.1	2.0	7.0	13.0
LYM (%)	65.7	10.8	39.8	80.2	72.3	5.1	61.9	80.1
MONO ($10^3/\mu\text{L}$)	0.63	0.18	0.37	1.13	0.85	0.38	0.25	1.70
MONO (%)	4.69	1.53	2.42	7.70	5.45	1.99	2.80	10.09
EOS ($10^3/\mu\text{L}$)	0.19	0.13	0.03	0.45	0.15	0.07	0.04	0.30
EOS(%)	1.40	0.92	0.27	3.44	1.07	0.58	0.41	2.49
BAS ($10^3/\mu\text{L}$)	0.06	0.05	0.01	0.15	0.04	0.01	0.02	0.07
BAS (%)	0.38	0.27	0.10	1.00	0.28	0.08	0.20	0.40
LUC ($10^3/\mu\text{L}$)	0.16	0.09	0.03	0.34	0.13	0.09	0.03	0.37
LUC(%)	1.05	0.57	0.30	2.30	0.98	0.75	0.20	2.82
RET ($10^9/\text{L}$)	84.1	43.8	19.0	177.0	95.2	45.5	28.6	177.2
RET (%)	1.1	0.6	0.3	2.5	1.2	0.6	0.4	2.7

Hematology/Chemistry

Sinclair Nanopig™ Hematology 4-5 Months

Parameters	Male 4-5 Months (n=42)				Female 4-5 Months (n=40)			
	Mean	SD	95% Reference Range		Mean	SD	95% Reference Range	
WBC ($10^3/\mu\text{L}$)	13.7	2.7	9.5	19.9	13.8	2.5	9.3	18.8
RBC ($10^6/\mu\text{L}$)	7.7	0.9	6.7	9.8	7.6	0.5	6.8	8.5
Hgb (g/dL)	14.7	1.9	11.4	17.9	14.5	0.9	12.9	16.2
HCT (%)	43.2	4.4	35.1	50.3	41.3	3.2	35.8	47.7
MCV (fL)	56.7	3.1	51.5	62.3	55.0	3.7	49.0	61.2
MCH (pg)	19.3	1.4	16.8	22.1	19.2	1.0	17.6	20.8
MCHC (g/dL)	33.8	1.7	30.7	36.8	34.9	1.2	32.4	36.5
PLT ($10^3/\mu\text{L}$)	470.6	101.9	324.3	634.2	441.1	80.3	259.7	588.7
NEU ($10^3/\mu\text{L}$)	3.7	1.5	1.6	6.4	3.2	1.0	1.4	5.1
NEU (%)	28.6	10.4	11.9	47.8	22.7	6.0	11.2	36.3
LYM ($10^3/\mu\text{L}$)	8.8	1.7	5.7	11.3	9.9	2.3	5.8	14.4
LYM (%)	64.8	9.5	46.6	79.4	71.7	4.8	64.8	79.8
MONO ($10^3/\mu\text{L}$)	0.49	0.15	0.28	0.75	0.53	0.17	0.31	0.88
MONO (%)	3.68	1.19	1.69	6.30	3.90	0.98	2.59	5.75
EOS ($10^3/\mu\text{L}$)	0.14	0.07	0.05	0.29	0.18	0.07	0.09	0.30
EOS(%)	0.95	0.41	0.39	1.91	1.26	0.45	0.59	2.31
BAS ($10^3/\mu\text{L}$)	0.05	0.04	0.01	0.12	0.03	0.01	0.01	0.06
BAS (%)	0.35	0.22	0.10	0.70	0.22	0.07	0.10	0.31
LUC ($10^3/\mu\text{L}$)	0.11	0.08	0.00	0.29	0.13	0.03	0.09	0.17
LUC(%)	0.74	0.46	0.00	1.66	1.09	0.38	0.70	1.80
RET ($10^9/\text{L}$)	77.4	25.1	38.1	128.2	65.63	27.2	25.2	124.1
RET (%)	1.0	0.3	0.5	1.7	0.86	0.3	0.3	1.6

Hematology/Chemistry

Sinclair Nanopig™ Hematology 6-7 Months

Parameters	Male 6-7 Months (n=47)				Female 6-7 Months (n=28)			
	Mean	SD	95% Reference Range		Mean	SD	95% Reference Range	
WBC ($10^3/\mu\text{L}$)	14.3	4.2	7.8	21.4	10.8	2	7.7	14.3
RBC ($10^6/\mu\text{L}$)	7.6	0.5	6.7	8.6	8.0	0.5	6.9	8.8
Hgb (g/dL)	14.5	1.0	12.4	16.1	15.8	1.0	13.9	17.3
HCT (%)	43.4	2.6	38.4	46.8	46.3	2.5	41.3	50.0
MCV (fL)	57.8	1.5	55.4	60.5	57.9	2.5	53.6	61.4
MCH (pg)	19.3	0.6	18.2	20.3	19.8	1.1	18.1	21.9
MCHC (g/dL)	33.7	0.6	32.5	34.7	34.2	1.1	32.6	36.5
PLT ($10^3/\mu\text{L}$)	477.8	143.8	173.8	705.6	391.1	142.1	91.7	624.5
NEU ($10^3/\mu\text{L}$)	4.6	2.70	0.1	9.6	2.4	1.00	0.7	4.3
NEU (%)	33.6	15.3	1.6	64.3	21.2	4.8	11.4	30.1
LYM ($10^3/\mu\text{L}$)	7.6	2.3	4.4	12.4	7.6	1.6	5	9.9
LYM (%)	54.9	10.7	31.4	72.2	70.7	3.5	64.5	77.4
MONO ($10^3/\mu\text{L}$)	0.70	0.20	0.40	1.00	0.50	0.10	0.30	0.70
MONO (%)	4.80	1.50	2.80	8.00	4.70	1.30	2.80	7.40
EOS ($10^3/\mu\text{L}$)	0.20	0.10	0.00	0.30	0.25	0.13	0.08	0.50
EOS(%)	1.30	0.80	0.00	3.00	2.10	0.90	0.90	4.00
BAS ($10^3/\mu\text{L}$)	0.10	0.00	0.00	0.20	0.03	0.01	0.01	0.05
BAS (%)	0.40	0.30	0.10	0.90	0.27	0.08	0.16	0.40
LUC ($10^3/\mu\text{L}$)	0.10	0.10	0.10	0.20	0.06	0.06	0.00	0.19
LUC(%)	0.70	0.30	0.30	1.20	0.56	0.60	0.00	1.72
RET ($10^9/\text{L}$)	89.0	40.8	35.7	182.2	84.3	24.7	45.9	131.2
RET (%)	1.1	0.5	0.5	2.2	1.1	0.3	0.6	1.7

Hematology/Chemistry

Sinclair Nanopig™ Hematology 8-9 Months

Parameters	Male 8-9 Months (n=41)				Female 8-9 Months (n=32)			
	Mean	SD	95% Reference Range		Mean	SD	95% Reference Range	
WBC ($10^3/\mu\text{L}$)	13.6	2.8	9.4	19.6	11.9	2.1	8.3	16.0
RBC ($10^6/\mu\text{L}$)	8.0	0.7	6.5	9.3	7.6	0.4	6.7	8.3
Hgb (g/dL)	14.9	0.9	12.9	16.6	15.0	0.9	13.8	16.4
HCT (%)	46.0	2.8	40.9	51.3	44.3	2.4	39.9	48.6
MCV (fL)	57.8	2.3	53.0	61.6	58.8	1.7	55.6	61.5
MCH (pg)	18.8	1.0	16.8	20.4	19.7	0.8	18.3	21.2
MCHC (g/dL)	32.6	1.1	31.0	34.6	33.7	1.0	32.2	35.7
PLT ($10^3/\mu\text{L}$)	476.3	110.4	288.0	661.2	379.8	152.6	59.8	617.3
NEU ($10^3/\mu\text{L}$)	4.5	1.7	2.0	8.6	2.4	1.1	0.4	4.7
NEU (%)	34.3	10.3	16.9	55.9	21.4	5.2	14.6	31.9
LYM ($10^3/\mu\text{L}$)	7.9	1.9	4.7	12.4	7.6	1.5	4.8	10.4
LYM (%)	58.1	10.8	36.1	76.8	68.5	6.1	54.2	76.3
MONO ($10^3/\mu\text{L}$)	0.51	0.17	0.23	0.83	0.61	0.30	0.15	1.27
MONO (%)	3.93	1.40	1.80	6.40	5.21	2.07	1.78	9.15
EOS ($10^3/\mu\text{L}$)	0.17	0.08	0.07	0.32	0.30	0.19	0.04	0.69
EOS(%)	1.27	0.57	0.30	2.21	2.56	1.51	0.38	5.80
BAS ($10^3/\mu\text{L}$)	0.08	0.06	0.02	0.21	0.03	0.01	0.01	0.05
BAS (%)	0.57	0.31	0.20	1.20	0.28	0.09	0.15	0.40
LUC ($10^3/\mu\text{L}$)	0.11	0.05	0.03	0.18	0.06	0.08	0.00	0.23
LUC(%)	0.89	0.34	0.30	1.48	0.58	0.81	0.00	2.48
RET ($10^9/\text{L}$)	81.9	33.2	23.0	133.7	59.3	26.4	17.5	107.5
RET (%)	1.1	0.4	0.3	1.9	0.8	0.3	0.2	1.4

Hematology/Chemistry

Sinclair Nanopig™ Serum Chemistry 2-3 Months

Parameters	Male 2-3 Months (n=54)				Female 2-3 Months (n=46)			
	Mean	SD	95% Reference Range		Mean	SD	95% Reference Range	
BUN (mg/dL)	15.2	5.3	6.1	22.9	18.2	3.2	13.0	25.0
CRE (mg/dL)	0.9	0.2	0.5	1.3	0.9	0.2	0.5	1.3
GLU (mg/dL)	97.8	16.5	71.4	137.6	88.3	10.2	70.5	108.8
Na (mEq/L)	144.3	2.7	139.0	149.1	143.6	4.3	136.1	151.0
K (mEq/L)	5.9	0.7	4.6	7.1	6.4	0.7	5.0	7.8
Cl (mEq/L)	102.3	1.8	99.0	106.0	102.9	2.7	98.0	107.9
ALP (U/L)	96.4	22.6	63.1	135.8	85.3	19.5	55.1	121.6
ALT (U/L)	39.4	6.4	28.9	55.2	41.7	8.9	25.1	59.0
AST (U/L)	32.1	7.7	21.0	47.0	30.9	8.7	19.0	51.8
TBIL (mg/dL)	0.15	0.06	0.10	0.29	0.13	0.05	0.10	0.20
DBIL (mg/dL)	0.03	0.02	0.00	0.05	0.03	0.01	0.01	0.04
CK (U/L)	370.0	193.7	113.0	718.0	390.8	213.6	165.0	828.8
GGT (U/L)	44.3	9.0	27.2	58.9	46.1	11.5	26.4	70.8
TP (g/dL)	6.2	0.6	5.1	7.1	6.1	0.4	5.4	6.8
ALB (g/dL)	4.1	0.4	3.1	4.8	3.9	0.3	3.5	4.4
GLOB (g/dL)	2.2	0.4	1.5	3.0	2.2	0.3	1.7	2.8
A\G ratio	1.8	0.4	1.2	2.7	1.8	0.4	1.1	2.4
AMY (U/L)	1044.3	250.5	678.1	1534.5	930.3	228.1	591.0	1462.3
Ca (mg/dL)	11.3	0.6	10.5	12.5	11.4	0.5	10.3	12.3
PHOS (mg/dL)	8.1	0.8	6.3	9.3	8.1	0.6	7.0	9.3
CHOL (mg/dL)	94.9	24.8	51.1	129.7	105.5	29.8	62.3	160.9
TRIG (mg/dL)	43.8	15.0	23.7	79.4	42.5	15.8	22.1	81.8
LDH (U/L)	513.5	126.7	287.7	753.0	526.6	63.8	427.0	666.0

Hematology/Chemistry

Sinclair Nanopig™ Serum Chemistry 4-5 Months

Parameters	Male 4-5 Months (n=42)				Female 4-5 Months (n=40)			
	Mean	SD	95% Reference Range		Mean	SD	95% Reference Range	
BUN (mg/dL)	13.9	3.9	8.0	22.0	14.8	2.7	9.9	19.0
CRE (mg/dL)	1.1	0.2	0.8	1.5	1.1	0.1	0.9	1.3
GLU (mg/dL)	84.5	12.5	65.9	108.5	76.9	15.6	56.0	102.2
Na (mEq/L)	143.4	3.1	138.9	150.0	144.0	1.9	141.0	147.1
K (mEq/L)	5.8	0.8	4.3	7.1	6.0	0.8	4.8	7.3
Cl (mEq/L)	101.1	2.3	96.0	104.0	103.5	2.3	100.0	107.0
ALP (U/L)	68.3	18.9	39.0	106.2	66.9	16.5	32.9	98.2
ALT (U/L)	37.8	7.8	25.6	50.4	42.8	5.6	34.9	53.2
AST (U/L)	27.7	7.5	18.0	43.2	28.1	5.7	17.6	38.0
TBIL (mg/dL)	0.13	0.05	0.10	0.20	0.10	0.00	0.10	0.10
DBIL (mg/dL)	0.03	0.01	0.02	0.05	0.03	0.04	0.00	0.10
CK (U/L)	454.7	274.8	175.3	1246.1	283.8	116.0	156.0	541.3
GGT (U/L)	44.5	9.5	29.0	63.1	48.3	10.5	29.9	66.3
TP (g/dL)	6.6	0.4	5.9	7.3	6.2	0.2	5.8	6.7
ALB (g/dL)	4.2	0.3	3.8	4.7	4.0	0.2	3.5	4.3
GLOB (g/dL)	2.6	0.4	1.8	3.2	2.3	0.3	1.8	2.8
A\G ratio	1.7	0.4	1.0	2.4	1.8	0.3	1.2	2.2
AMY (U/L)	1015.3	266.8	586.8	1511.7	972.9	195.4	643.6	1349.3
Ca (mg/dL)	11.1	0.5	10.4	12.3	10.8	0.5	10.1	11.7
PHOS (mg/dL)	8.1	0.9	6.8	9.7	7.5	0.5	6.5	8.3
CHOL (mg/dL)	103.2	19.8	67.0	138.2	92.4	12.9	68.5	113.2
TRIG (mg/dL)	34.1	11.7	18.0	59.2	33.2	9.3	18.9	54.1
LDH (U/L)	397.4	68.2	263.0	489.3	497.2	66.2	371.9	636.6

Hematology/Chemistry

Sinclair Nanopig™ Serum Chemistry 6-7 Months

Parameters	Male 6-7 Months (n=47)				Female 6-7 Months (n=28)			
	Mean	SD	95% Reference Range		Mean	SD	95% Reference Range	
BUN (mg/dL)	13.6	3.4	7.0	19.9	15.7	2.6	11.3	19.7
CRE (mg/dL)	1.1	0.1	0.9	1.4	1.2	0.1	1.0	1.4
GLU (mg/dL)	96.9	15.2	75.1	124.0	84.1	8.8	70.3	101.1
Na (mEq/L)	145.9	4.3	139.0	154.0	145.2	1.5	143.0	148.0
K (mEq/L)	5.7	0.7	4.4	7.3	5.9	0.6	4.6	6.9
Cl (mEq/L)	103.0	2.8	98.1	108.0	103.0	1.6	101.0	105.7
ALP (U/L)	102.9	35.3	51.3	172.2	74.4	12.3	57.0	96.0
ALT (U/L)	41.0	10.5	23.2	62.9	41.4	6.5	29.9	52.7
AST (U/L)	34.2	13.3	19.0	63.1	26.4	6.2	15.2	38.0
TBIL (mg/dL)	0.15	0.06	0.10	0.29	0.10	0.00	0.10	0.10
DBIL (mg/dL)	0.04	0.01	0.02	0.06	0.03	0.02	0.00	0.05
CK (U/L)	299.3	292.2	7.8	1074.5	344.5	238.2	169.6	870.6
GGT (U/L)	47.8	41.8	13.6	198.4	41.4	13.4	21.2	62.6
TP (g/dL)	6.7	0.5	5.9	7.4	6.6	0.3	6.2	7.1
ALB (g/dL)	4.2	0.3	3.6	4.7	4.2	0.2	3.8	4.7
GLOB (g/dL)	2.5	0.5	1.7	3.4	2.4	0.3	1.8	3.0
A\G ratio	1.7	0.4	1.1	2.5	1.8	0.2	1.4	2.3
AMY (U/L)	1034.2	288.3	595.9	1636.9	1076.6	231.1	745.0	1534.9
Ca (mg/dL)	11.4	0.5	10.5	12.2	11.5	0.4	10.7	12.1
PHOS (mg/dL)	7.9	0.7	6.5	9.1	7.6	0.5	6.7	8.6
CHOL (mg/dL)	95.0	18.4	64.6	132.6	108.7	15.6	89.5	139.6
TRIG (mg/dL)	42.1	15.3	18.4	73.9	52.1	18.2	28.4	87.5
LDH (U/L)	384.9	76.1	264.7	554.3	446.2	42.4	368.3	522.9

Hematology/Chemistry

Sinclair Nanopig™ Serum Chemistry 8-9 Months

Parameters	Male 8-9 Months (n=41)				Female 8-9 Months (n=32)			
	Mean	SD	95% Reference Range		Mean	SD	95% Reference Range	
BUN (mg/dL)	13.3	5.2	6.0	23.9	16.1	1.8	13.0	19.3
CRE (mg/dL)	1.1	0.2	0.6	1.5	1.3	0.2	1.0	1.6
GLU (mg/dL)	96.6	16.9	75.0	138.1	78.7	16.4	50.5	108.8
Na (mEq/L)	143.4	2.9	139.0	149.0	144.0	2.0	140.0	148.0
K (mEq/L)	5.6	1.0	3.8	7.9	6.1	0.6	5.0	7.4
Cl (mEq/L)	100.8	2.6	96.0	106.0	101.8	1.5	99.6	105.0
ALP (U/L)	86.8	34.3	33.0	143.5	56.8	15.9	27.1	82.0
ALT (U/L)	45.0	14.7	19.0	70.0	44.1	8.1	31.8	58.3
AST (U/L)	32.3	12.8	17.0	67.1	28.0	6.2	17.7	41.4
TBIL (mg/dL)	0.15	0.06	0.10	0.20	0.15	0.07	0.00	0.22
DBIL (mg/dL)	0.03	0.02	0.00	0.07	0.03	0.03	0.00	0.10
CK (U/L)	305.6	307.0	26.1	1114.3	405.7	312.4	0.0	1074.1
GGT (U/L)	121.8	148.1	26.6	468.4	47.1	7.9	33.9	60.5
TP (g/dL)	6.9	0.6	5.8	8.2	6.7	0.4	6.1	7.5
ALB (g/dL)	4.0	0.4	3.4	4.7	3.9	0.3	3.3	4.2
GLOB (g/dL)	2.9	0.7	2.0	4.0	2.8	0.5	2.1	3.8
A\G ratio	1.5	0.5	0.9	2.3	1.4	0.4	0.7	2.0
AMY (U/L)	994.0	271.5	601.3	1537.0	972.8	242.7	599.5	1445.2
Ca (mg/dL)	11.2	0.6	10.3	12.3	11.1	0.6	9.9	12.1
PHOS (mg/dL)	7.5	0.7	6.4	9.0	7.3	0.3	6.8	7.8
CHOL (mg/dL)	84.3	14.6	57.1	109.0	124.8	23.8	88.4	171.0
TRIG (mg/dL)	37.0	13.1	21.0	59.0	41.8	19.7	0.0	69.3
LDH (U/L)	397.2	60.7	300.0	499.8	450.1	70.0	340.0	609.2

Electrochemistry

Sinclair Nanopig™ ECG Results 2-7 Months

ECG Parameters	Male (n=24)				Female (n=37)			
	Mean	SD	Range		Mean	SD	Range	
			Min	Max			Min	Max
HR (bpm)	94.0	20.9	60.9	153.9	100.9	16.9	72.1	157.3
RR (msec)	672.8	144.8	389.9	998.0	614.6	95.1	381.7	833.9
PR (msec)	99.6	12.0	87.1	133.2	97.8	14.4	79.3	155.1
QRS (msec)	57.6	8.6	38.8	72.0	56.3	11.4	31.7	72.7
QT (msec)	268.6	33.5	212.7	344.4	255.3	18.4	194.7	295.1
QTc [Fridericia Correction] (msec)	308.0	31.8	254.2	379.3	301.6	23.9	242.7	349.3

Ophthalmology

Sinclair Nanopig™ Ophthalmology Findings 2-7 Months

Ophthalmology Findings			
Observation	n	Left	Right
Discharge	148	80 (54%)	79 (53%)
Discharge 2	148	22 (15%)	24 (16%)
Congestion	148	6 (4%)	6 (4%)
Corneal Opacity	148	1 (1%)	0