

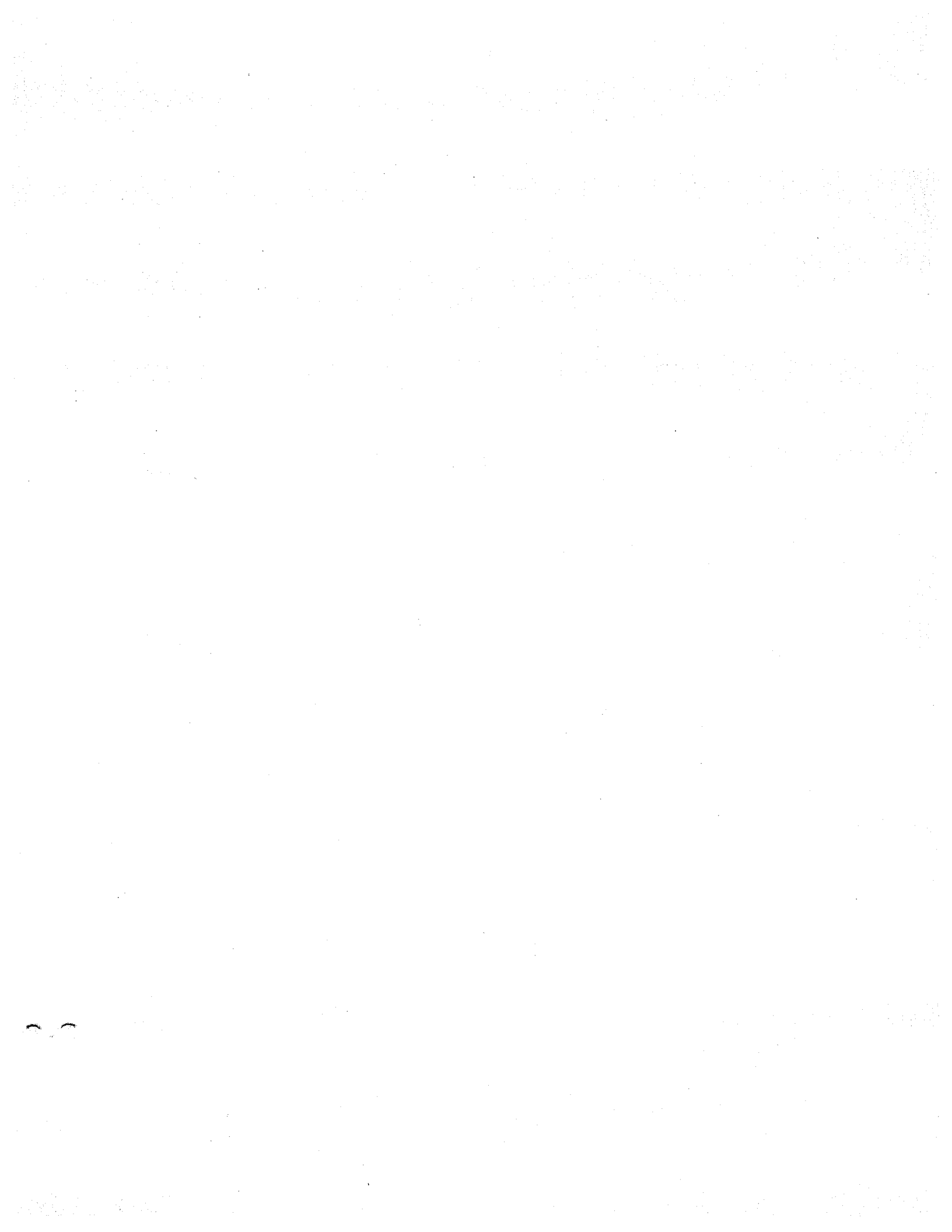
NHEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer /Arsenic  
 Experiment date :02/05/2009  
 Strain: YG1041  
 Activation :RLAO 100 2X 2ppd  
 Batch # 40  
 Hydrolyzed

Controls:	Plate 1	Plate 2	Plate 3	avg.
SP-	38	39	37	
SP+	68	70	55	64
2NF	1393	1467	1426	
2A	1203	1220	1251	

Sample ID:	UCO2616 H	UCO3596 H	UCO2432 H	UCO2789 H	avg.
ml-eq/pl	0	64	64	64	64
0.3	80	58	78	80	76
0.6	106	71	45	63	83
1.2	85	72	44	50	111
3	87	86	48	66	107
6	112	56	40	47	181
12	109	58	26	36	110
rs					0.94
s					15.5

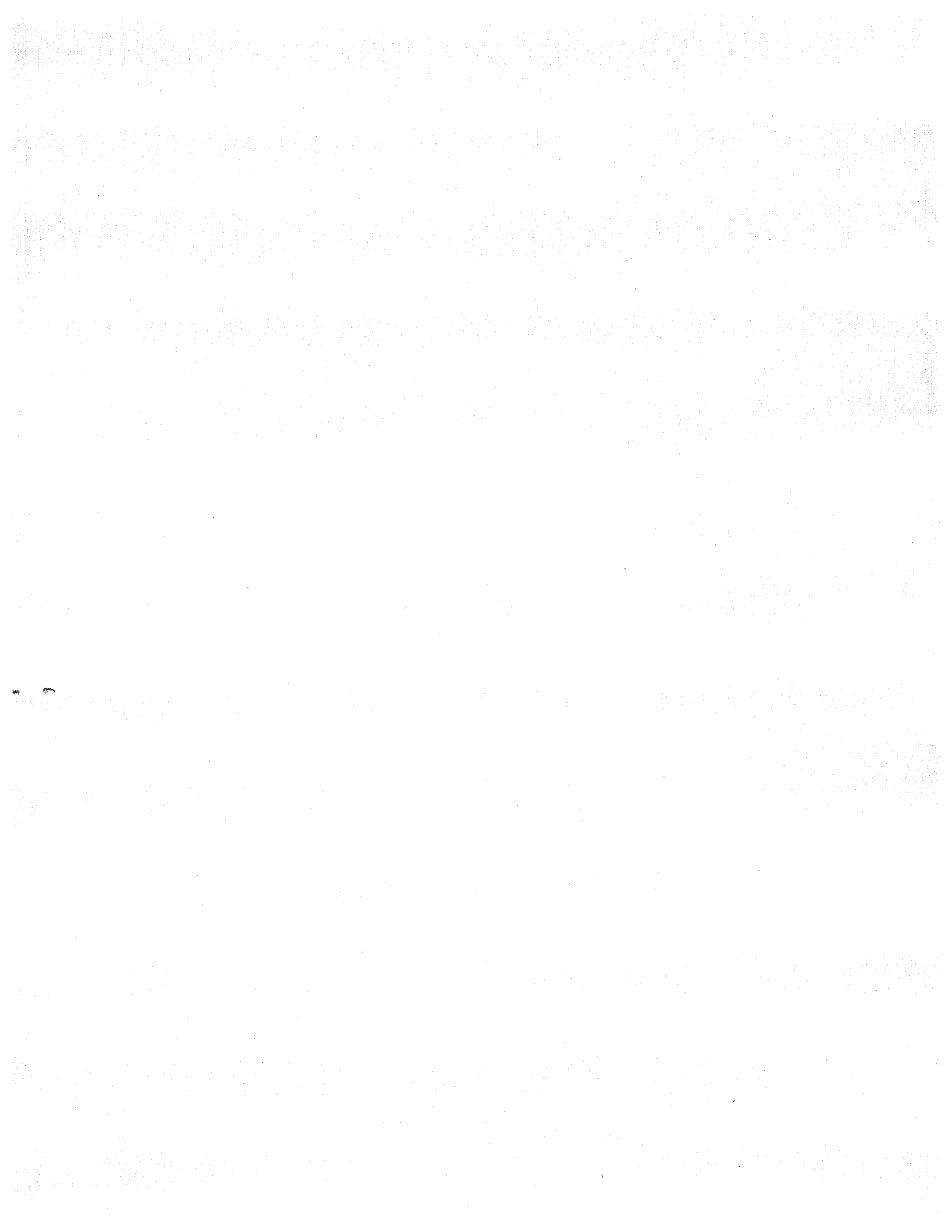
Sample ID:	UCO0664 H	UCO3892 H	UCO0315 H	UCO0248 H	avg.
ml-eq/pl	0	64	64	64	64
0.3	82	90	60	81	50
0.6	121	107	71	97	99
1.2	164	155	80	72	119
3	210	190	109	109	139
6	272	216	76	72	180
12	133	120	91	64	167
rs					0.93
s					51.5

120



Sample ID: ml-eq/pl	UCO3434 H	UCO0335 H	avg.	Blank H
0	64	64	64	64
0.3	74	76	95	56
0.6	93	114	116	60
1.2	83	154	170	56
3	70	172	190	65
6	97	250	216	60
12	76	156	163	49

IS  
S  
1.0  
82.6



NHEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer /Arsenic  
 Experiment date :02/05/2009  
 Strain: YG1041  
 Activation :RLAO 100 2X 2ppd

Batch # 40  
 Unhydrolyzed

Sample ID: ml-eq/pl	UCO2616 Uh	UCO3596 Uh	UCO2432 Uh	UCO2789 Uh
0	64	64	64	64
0.3	73	59	83	81
0.6	59	48	83	78
1.2	73	67	67	69
3	75	70	91	98
6	77	61	114	107
12	103	67	114	152
				avg.
				64
				81
				78
				69
				98
				107
				152
				64
				82
				81
				68
				95
				111
				133
				64
				65
				59
				73
				78
				65
				100
				103

rs  
 s  
 0.90  
 5.3

Sample ID: ml-eq/pl	UCO0664 Uh	UCO3892 Uh	UCO0315 Uh
0	64	64	64
0.3	74	63	84
0.6	69	65	53
1.2	87	78	76
3	105	68	65
6	189	83	62
12	248	82	94
			avg.
			64
			65
			68
			75
			62
			87
			100

rs  
 s  
 0.98  
 15.9



Sample ID:	UCO0248 Uh		UCO3434 Uh	
ml-eq/pl	avg.	64	64	64
0	64	64	64	64
0.3	47	66	67	67
0.6	78	67	70	66
1.2	90	93	63	62
3	100	80	53	69
6	121	146	68	70
12	170	253	79	91

rs 0.98  
s 12.3

Sample ID:	UCO0335 Uh		Blank Uh	
ml-eq/pl	avg.	64	64	64
0	64	64	64	64
0.3	60	62	61	61
0.6	56	73	65	65
1.2	101	93	97	57
3	88	102	95	62
6	181	178	180	65
12	359	320	340	64

rs 0.98  
s 23





NHEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer /Arsenic  
 Experiment date :02/05/2009  
 Strain: YG1041  
 Activation :RLAO 100 2X 2ppd

Batch # 43  
 Hydrolyzed

Controls:	Plate 1	Plate 2	Plate 3	avg.
SP-	38	39	37	
SP+	68	70	55	64
2NF	1393	1467	1426	
2A	1203	1220	1251	

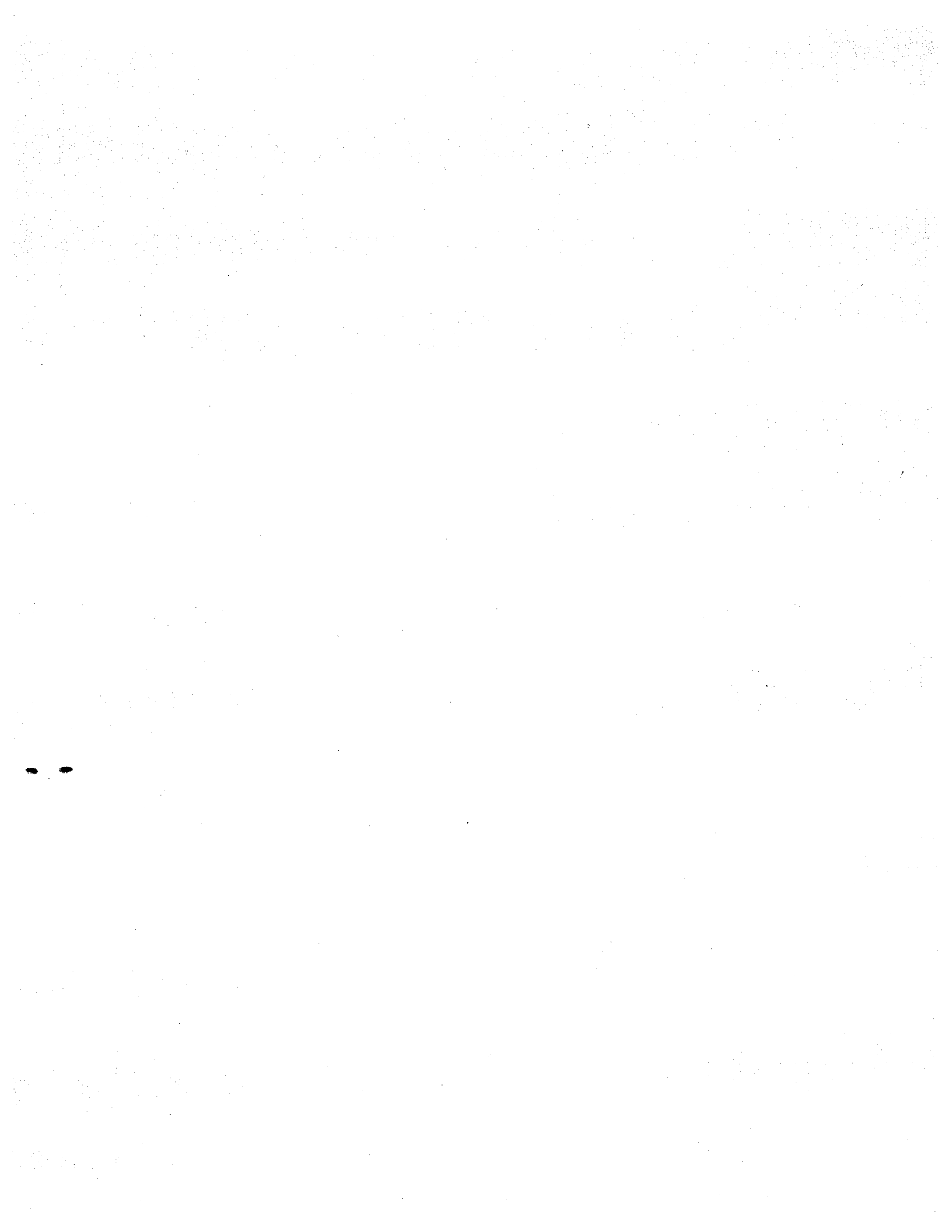
Sample ID:	UCO1650 H	UCO3158 H	UCO2855 H	avg.
ml-eq/pl	0	64	64	64
	0.3	65	77	50
	0.6	70	63	68
	1.2	67	68	74
	3	58	91	77
	6	100	90	121
	12	75	78	134
				176

rs 0.99  
 s 9.6

Sample ID:	UCO2533 H	UCO1028 H	UCO0140 H	avg.
ml-eq/pl	0	64	64	64
	0.3	46	83	84
	0.6	0	86	75
	1.2	0	121	77
	3	0	70	84
	6	0	190	90
	12	0	186	88

rs 0.93  
 s 17.9

124



Sample ID:	UCO1646 H	UCO1500 H	UCO2648 H	avg.
ml-eq/pl	64	64	64	64
0	54	89	82	67
0.3	64	95	78	86
0.6	65	55	116	123
1.2	81	90	110	145
3	103	75	151	143
6	115	63	151	140
12				
rs				<b>0.80</b>
s				21.2

Sample ID:	UCO3588 H	Blank H	avg.
ml-eq/pl	64	64	64
0	87	50	66
0.3	73	63	64
0.6	91	65	58
1.2	148	40	62
3	166	72	57
6	146	55	69
12			
rs			<b>0.89</b>
s			16.5



NHEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer /Arsenic  
 Experiment date :02/05/2009  
 Strain: YG1041  
 Activation :RLAO 100 2X 2ppd

Batch # 43  
 Unhydrolyzed

Sample ID: ml-eq/pl	UCO1650 Uh	UCO3158 Uh	UCO2855 Uh
0	64	64	64
0.3	64	66	68
0.6	70	56	62
1.2	79	52	55
3	74	68	72
6	82	93	84
12	64	115	87

rs  
s

Sample ID: ml-eq/pl	UCO2533 Uh	UCO1028 Uh	UCO0140 Uh	avg.
0	64	64	64	64
0.3	1	67	72	62
0.6	0	75	73	64
1.2	0	78	82	68
3	0	84	132	74
6	0	205	211	88
12	0	64	164	94

rs  
s

0.97  
4.2

901









NHEERL/ECO/MTB/DMD/2006/0:2/RO  
 Urinary Mutagenicity Study for New England Bladder Cancer/Arsenic  
 Experiment date :2/24/2009  
 Strains:YG1041  
 Activation :RLAO100 2XS9

Batch# 42

**Hydrolyzed**  
 PPM

Controls:	Plate 1	Plate 2	Plate 3	avg.
SP-	21	36	29	
SP+	46	52	46	
2NF	1721	1759	1872	48
2A	1205	1248	1160	

Sample ID:	ml-eq/pl	UCO 3201 H	UCO3983 H	UCO2733 H	avg.
0	48	48	48	48	48
0.3	56	45	50	71	61
0.6	97	60	49	72	61
1.2	83	72	73	103	90
3	107	96	87	98	134
6	92	83	113	183	174
12	76	68	132	247	274
					<b>0.97</b>
					17.3

rs	s	avg.
		<b>0.83</b>
		17.1
		<b>0.97</b>
		12.0

Sample ID:	ml-eq/pl	UCO2058 H	UCO2424 H	UCO0178 H	avg.
0	48	48	48	48	48
0.3	58	45	64	48	49
0.6	53	64	68	56	53
1.2	61	65	70	69	66
3	88	125	88	88	81
6	97	98	72	83	101
12	54	53	43	99	132
					<b>0.97</b>
					13.0

rs	s	avg.
		<b>0.93</b>
		19.7
		<b>0.97</b>
		13.0

142



Sample ID: ml-eq/pl	UCO0899 H	UCO0466 H	UCO3185 H	avg.
0	48	48	48	48
0.3	83	49	44	46
0.6	81	70	65	47
1.2	97	64	64	56
3	128	57	77	66
6	78	64	93	78
12	54	36	89	80
				104

rs  
s  
0.86  
40.5  
0.87  
6.7

Sample ID: ml-eq/pl	UCO0593 H	Blank H	avg.
0	48	48	48
0.3	46	49	46
0.6	61	54	43
1.2	62	71	49
3	90	101	48
6	78	93	54
12	111	119	55

rs  
s  
0.78  
5.7



NHEERL/ECD/MTB/DMD/2006/012/RO  
 Urinary Mutagenicity Study for New England Bladder Cancer/Arsenic  
 Experiment date :2/24/2009  
 Strains:YG1041  
 Activation :RLAO100 2XS9

Batch# 42

Uhydrolyzed  
 PPM

Sample ID:	UCO3201 Uh	UCO3983 Uh	UCO2733 Uh	avg
ml-eq/pl				
0	48	48	48	48
0.3	37	45	65	67
0.6	57	48	65	57
1.2	50	56	64	67
3	58	65	98	106
6	78	67	85	118
12	86	95	275	238
				0.93
				15.9

rs  
s

Sample ID:	UCO2058 Uh	UCO2424 Uh	UCO0178 Uh
ml-eq/pl			
0	48	48	48
0.3	49	71	51
0.6	46	43	44
1.2	47	53	46
3	58	68	52
6	42	62	73
12	2	59	70

rs  
s



Sample ID:	UCO0899 Uh	UCO0466 Uh	UCO3185 Uh
0	48	48	48
0.3	76	54	47
0.6	64	71	53
1.2	96	83	48
3	169	157	71
6	222	216	68
12	301	296	78
	avg	avg	avg
	48	48	48
	53	55	55
	77	54	61
	70	45	50
	144	72	76
	209	81	75
	290	106	99
	0.98	0.88	
	28.3	3.9	

Sample ID:	UCO0593 Uh	Blank Uh
0	48	48
0.3	68	41
0.6	57	44
1.2	61	50
3	59	49
6	60	62
12	77	63
	48	
	69	
	45	
	64	
	54	
	64	
	86	

rs  
s





NHEERL/ECD/MTB/DMD/2006/0/2/RO  
 Urinary Mutagenicity Study for New England Bladder Cancer/Arsenic  
 Experiment date :2/24/2009  
 Strains:YG1041  
 Activation :RLAO100 2XS9

Batch# 41

Hydrolyzed  
 PPM

Controls:	Plate 1	Plate 2	Plate 3	avg.	UCO04O4 H
SP-	21	36	29		48
SP+	46	52	46		64
2NF	1721	1759	1872		92
2A	1205	1248	1160		93
					72
					67
					72
					68
					51

UCO1738 H

UCO1839 H

UCO2705 H

UCO1589 H

Sample ID:	UCO3035 H	UCO1738 H	UCO1839 H	UCO2705 H	UCO1589 H
0	48	48	48	48	48
0.3	64	71	62	68	56
0.6	85	87	78	66	75
1.2	124	119	83	86	67
3	44	57	74	75	52
6	198	204	86	115	85
12	193	206	115	99	65

rs  
s

0.65  
20.6

UCO1839 H

UCO2705 H

UCO1589 H

Sample ID:	UCO1839 H	UCO2705 H	UCO1589 H
0	48	48	48
0.3	66	62	67
0.6	72	78	57
1.2	80	83	77
3	45	74	69
6	86	86	79
12	108	115	85

rs  
s

0.69  
6.5



Sample ID:	UCO3346 H	UCO1387H	UCO1470 H	avg
ml-eq/pl	48	48	48	48
0	48	48	48	48
0.3	56	75	58	42
0.6	67	85	69	64
1.2	64	69	84	85
3	46	81	0	73
6	60	99	116	122
12	37	90	176	165
rs				<b>0.94</b>
s				9.8

Sample ID:	UCO1688 H	Blank H
ml-eq/pl	48	48
0	48	48
0.3	54	56
0.6	99	93
1.2	90	92
3	67	98
6	175	169
12	205	206
rs		<b>0.91</b>
s		12.6

NHEERL/ECD/MTB/DMD/2006/02/RO  
 Urinary Mutagenicity Study for New England Bladder Cancer/Arsenic  
 Experiment date :2/24/2009  
 Strains:YG1041  
 Activation :RLAO100 2XS9

**Unhydrolyzed**  
 PPM



UCO0404 Uh

48  
53  
55  
55  
51  
66  
40

UCO1738 Uh

48  
57  
45  
64  
72  
81  
79

UCO3035 Uh

48  
72  
57  
55  
43  
73  
63

Sample ID:

mi-eq/pl  
0  
0.3  
0.6  
1.2  
3  
6  
12

rs  
s

UCO1589 Uh

48  
52  
40  
53  
61  
56  
84

UCO2705 Uh

48  
45  
51  
53  
40  
62  
80

UCO1839 Uh

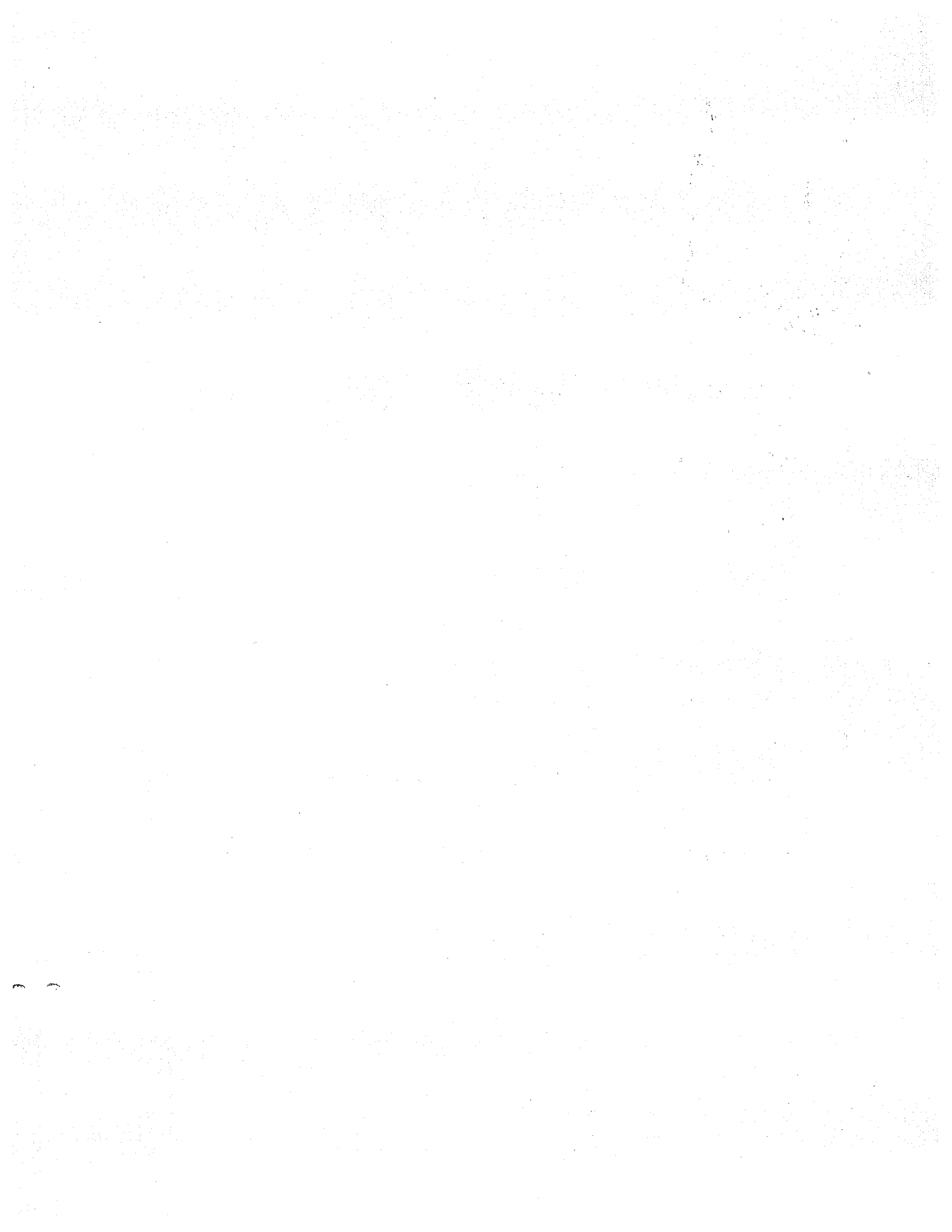
48  
44  
59  
50  
54  
69  
104

Sample ID:

mi-eq/pl  
0  
0.3  
0.6  
1.2  
3  
6  
12

rs  
s

0.87  
4.1



Sample ID:	UCO3346 Uh	UCO1387 Uh	UCO1470 Uh	avg.	
rs					
s					
	48	48	48	48	48
	0	48	61	50	50
	0.3	44	49	49	67
	0.6	53	43	46	85
	1.2	47	42	53	73
	3	0	61	70	122
	6	58	71	79	171
	12	45	96		
					<b>0.94</b>
					9.8

Sample ID:	UCO1688 Uh	Blank Uh	avg.	
rs				
s				
	48	48	48	48
	0	48	39	48
	0.3	54	53	58
	0.6	59	62	67
	1.2	68	40	50
	3	56	50	109
	6	104	167	
	12	174		
				<b>0.93</b>
				9.9

\*\*\* sample # 3346 urine very dark red

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NHEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer /Arsenic  
 Experiment date :03/05/2009  
 Strain: YG1041  
 Activation :RLAO 100 2X 2ppd

Batch # 44

Hydrolyzed

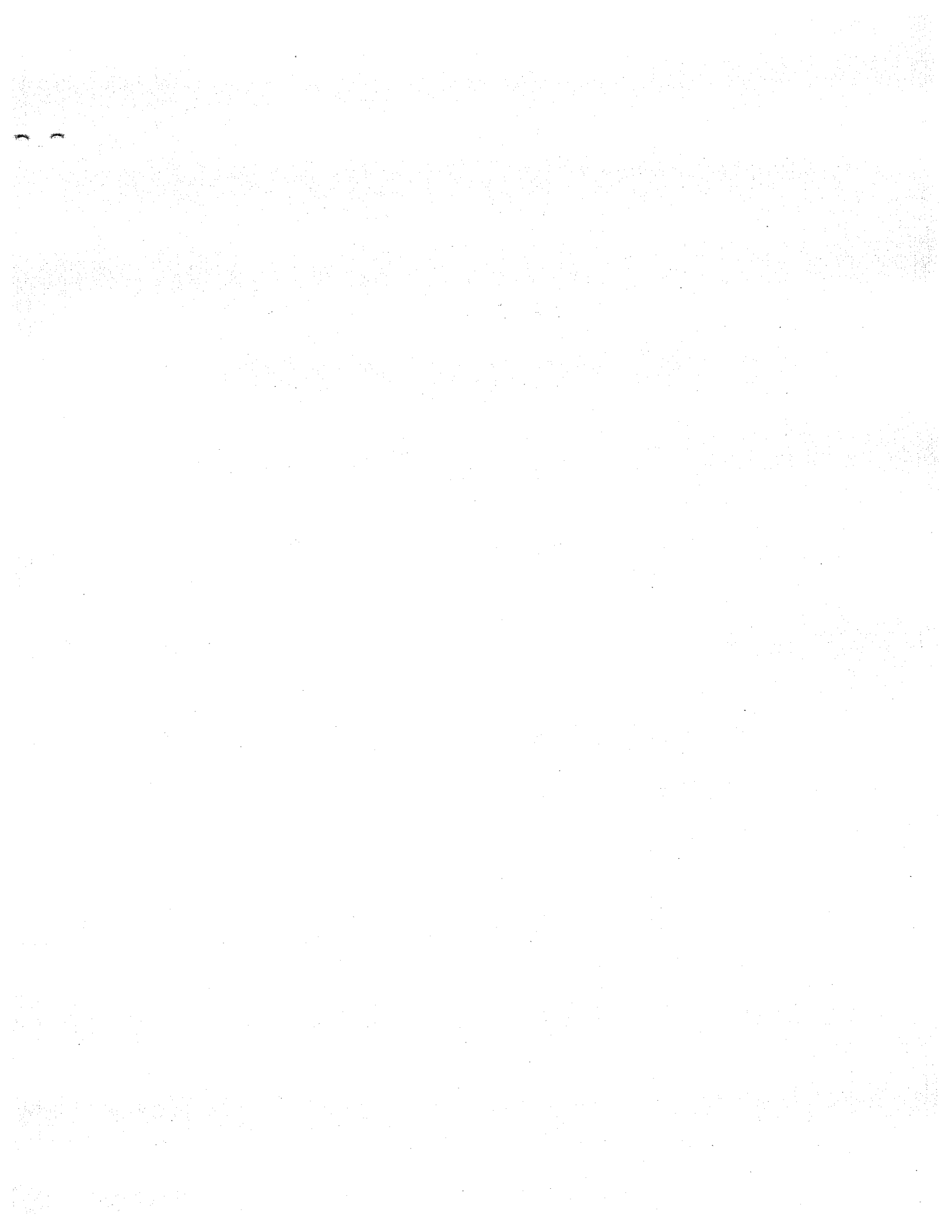
Controls:	Plate 1	Plate 2	Plate 3	avg.
SP-	28	41	39	
SP+	55	55	57	54
2NF	1263	1154	1161	
2A	800	799	839	

Sample ID;	UCO0493 H	UCO2049 H	UCO2143 H	avg.
0	54	54	54	54
0.3	86	67	56	48
0.6	106	83	93	74
1.2	90	86	99	90
3	84	92	83	99
6	103	103	126	114
12	111	84	141	115

rs	0.43	0.73		
s	4.0	9.7		

Sample ID;	UCO1745 H	UCO2541 H	UCO0020 H	avg.
0	54	54	54	54
0.3	71	60	69	81
0.6	82	95	80	97
1.2	77	82	108	112
3	71	89	131	132
6	54	68	69	57
12		40	69	0

rs	0.32	0.97		
s	3.4	45.3		



Sample ID; eq-ml/pl	UCO2156 H	UCO1501 H	UCO1094 H
0	54	54	54
0.3	65	72	14
0.6	96	130	11
1.2	99	154	17
3	109	218	8
6	98	246	15
12	109	289	16
	avg.	avg.	avg.
	54	54	54
	78	72	90
	83	130	109
	91	154	158
	106	218	200
	96	246	300
	90	289	263
rs	<b>0.84</b>	<b>0.91</b>	<b>0.91</b>
s	33.4	48.9	48.9

Sample ID; eq-ml/pl	UCO1136 H	Blank H
0	54	54
0.3	98	39
0.6	114	36
1.2	119	43
3	70	35
6	130	44
12	85	49
	avg.	avg.
	54	54
	100	99
	133	124
	126	123
	126	98
	125	128
	97	91
rs	<b>0.97</b>	<b>0.97</b>
s	116.7	116.7



NHEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer /Arsenic  
 Experiment date :03/05/2009  
 Strain: YG1041  
 Activation :RLAO 100 2X 2ppd

Batch # 44  
 Uhydrolyzed

Sample ID; eq-ml/pl	UCOO493 Uh	UCO2049 Uh	UCO2143 Uh	avg.
0	54	54	54	54
0.3	79	62	44	69
0.6	87	60	60	59
1.2	103	79	51	64
3	75	55	49	66
6	133	100	71	87
12	180	87	113	102
rs				0.96
s				4.4

Sample ID; eq-ml/pl	UCO1745 Uh	UCO2541 Uh	UCO0020 Uh	avg.
0	54	54	54	54
0.3	51	77	76	60
0.6	51	56	63	73
1.2	63	61	59	70
3	79	55	58	72
6	97	107	106	101
12	84	116	95	89
rs				0.90
s				4.9









Sample ID; eq-ml/pl	UCO2156 Uh	UCO1501 Uh	UCO1094 Uh
0	54	54	54
0.3	65	68	73
0.6	65	80	78
1.2	70	94	88
3	67	51	74
6	88	197	222
12	119	317	304
	avg.	avg.	avg.
	54	54	54
	68	77	73
	61	76	78
	62	81	88
	40	96	74
	93	346	222
	96	291	304
rs	0.83	0.89	0.89
s	4.2	19.6	19.6

Sample ID; eq-ml/pl	UCO1136 Uh	Blank Uh
0	54	54
0.3	80	34
0.6	76	32
1.2	110	39
3	80	39
6	188	38
12	163	41
	avg.	
	54	54
	47	34
	80	32
	97	39
	110	39
	167	38
	202	41
rs	0.90	
s	18.4	



NHIEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer /Arsenic  
 Experiment date :03/05/2009  
 Strain: YG1041  
 Activation :RLAO 100 2X 2ppd

Batch # 45  
 Hydrolyzed

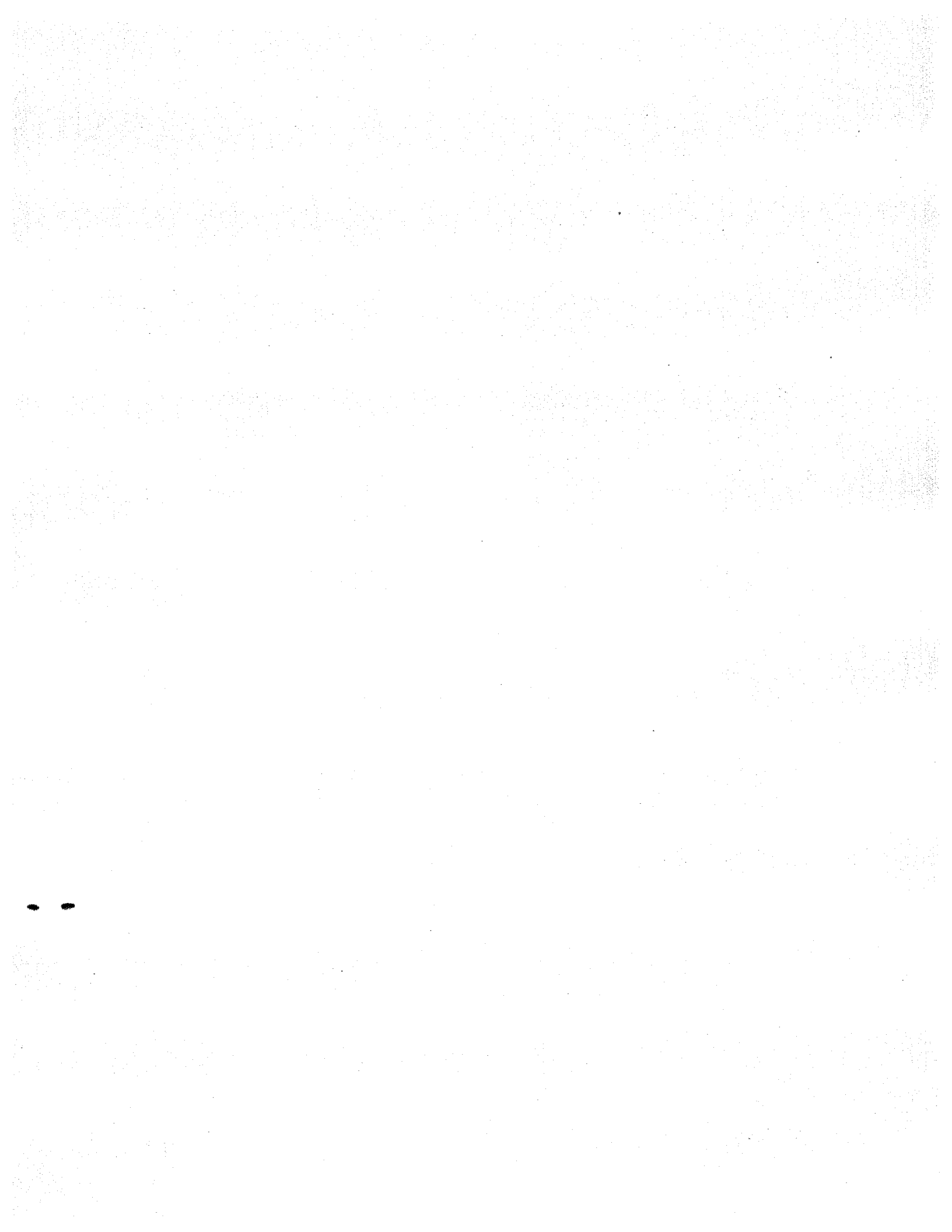
Controls:	Plate 1	Plate 2	Plate 3	avg.
SP-	28	41	39	
SP+	55	55	57	54
2NF	1263	1154	1161	
2A	800	799	839	

Sample ID:	UCO2683 H			UCO0037 H			UCO3783 H		
eq-ml/pl	54	84	96	54	72	49	54	72	83
0	54	84	96	54	72	49	54	72	83
0.3	130	218	266	144	238	294	79	111	131
0.6	107	141	149	83	123	119	50	108	141
1.2	118	119	141	157	257	322	83	91	119
3	118	119	141	157	257	322	83	91	119
6	118	119	141	157	257	322	83	91	119
12	118	119	141	157	257	322	83	91	119
rs	0.99			0.89			0.68		
s	60.8			13.9			7.4		

Sample ID:	UCO1953 H			UCO0172 H			UCO3136 H		
eq-ml/pl	54	80	70	54	74	79	54	74	83
0	54	80	70	54	74	79	54	74	83
0.3	100	121	108	74	107	125	73	87	96
0.6	103	124	126	79	104	123	69	97	105
1.2	103	124	126	79	104	123	97	97	103
3	103	124	126	79	104	123	97	97	103
6	103	124	126	79	104	123	97	97	103
12	103	124	126	79	104	123	97	97	103
rs	0.78			0.98			0.58		
s	11.2			30.6			7.2		







NHEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer /Arsenic  
 Experiment date : 03/05/2009  
 Strain: YG1041  
 Activation :RLAO 100 2X 2ppd

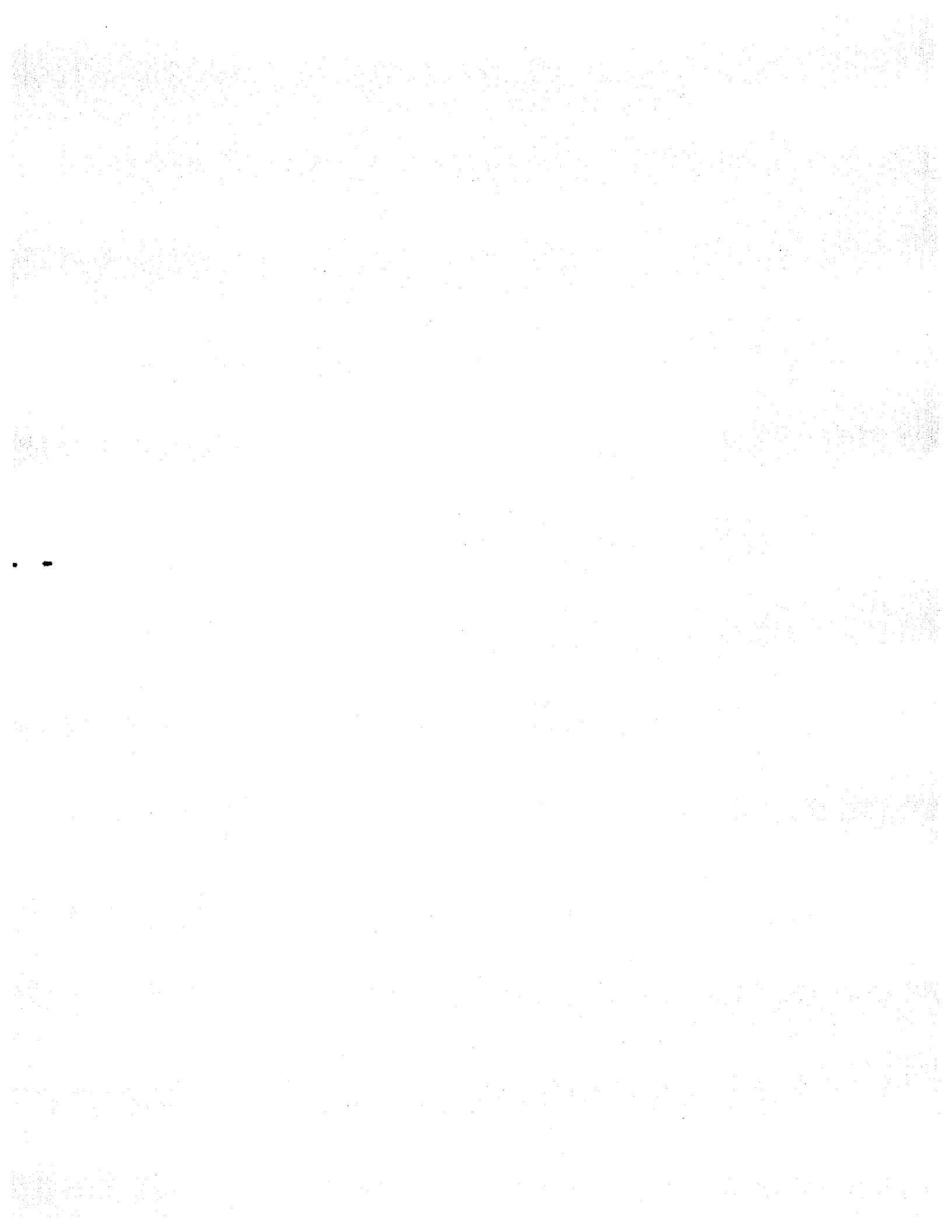
Batch # 45  
 Unhydrolyzed

Sample ID: eq-ml/pl	UCO2683 Uh	UCOO037 Uh	UCO3783 Uh
0	54	54	54
0.3	67	65	61
0.6	76	63	79
1.2	99	65	79
3	122	60	81
6	188	94	104
12	293	96	86
	avg.		
	54	54	54
	79	85	63
	74	65	72
	88	68	75
	106	69	82
	200	96	90
	333	90	92

rs  
 s  
 0.99  
 21.1

Sample ID: eq-ml/pl	UCO1953 Uh	UCO0172 Uh	UCO3136 Uh
0	54	54	54
0.3	60	52	76
0.6	67	69	77
1.2	75	77	76
3	76	88	85
6	85	83	110
12	120	98	122
	avg.		
	54	54	54
	63	81	76
	67	62	79
	67	72	62
	79	59	62
	80	83	108
	100	97	144

rs  
 s  
 0.94  
 4.0





Sample ID: eq-ml/pl	UCO1514 Uh	UCO1706 Uh	UCO0530 Uh
0	54	54	54
0.3	66	72	73
0.6	67	98	83
1.2	81	100	69
3	120	98	88
6	127	122	122
12	150	121	129
		avg.	avg.
		54	54
		89	74
		81	57
		73	92
		98	78
		124	122
		138	136
rs	0.73	0.90	
s	5.4	10.9	

Sample ID: eq-ml/pl	UCO0558 Uh	Blank Uh
0	54	54
0.3	75	70
0.6	73	69
1.2	63	70
3	83	70
6	93	69
12	97	69

rs  
s



NHEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer /Arsenic  
 Experiment date: 03/13/2009  
 Strain: YG1041  
 Activation :RLAO 100 2X 2ppd

Batch # 46  
 Hydrolyzed

SP-	41	33	32
SP+	68	65	66
2NF	1815	1921	1895
2A	1465	1447	1300

Sample ID:	UCO3125 H	UCO0086 H	UCO3977 H	avg.
eq-ml/pl	0	66	66	66
0.3	88	67	91	82
0.6	66	82	89	91
1.2	92	97	160	138
3	93	98	204	212
6	112	102	284	283
12	98	80	194	248
rs				0.95
s				36.1

Sample ID:	UCO1207 H	UCO1106 H	UCO3427 H	avg.
eq-ml/pl	0	66	66	66
0.3	78	69	94	93
0.6	85	104	106	119
1.2	79	205	136	110
3	73	271	61	75
6	125	401	73	84
12	129	490	98	61
rs				0.98
s				62.0



Sample ID: eq-ml/pl	UCO2688 H	UCO1025 H	UCO1889 H
0	66	66	66
0.3	69	75	62
0.6	73	88	57
1.2	106	105	80
3	48	110	91
6	115	136	109
12	62	123	128
			avg. 66
			72
			93
			95
			115
			136
			128
			66
			59
			66
			72
			73
			104
			94

0.89  
10.8

rs  
s

Sample ID: eq-ml/pl	UCO3095 H	Blank H
0	66	66
0.3	4	61
0.6	0	54
1.2	3	64
3	2	60
6	4	56
12	2	59

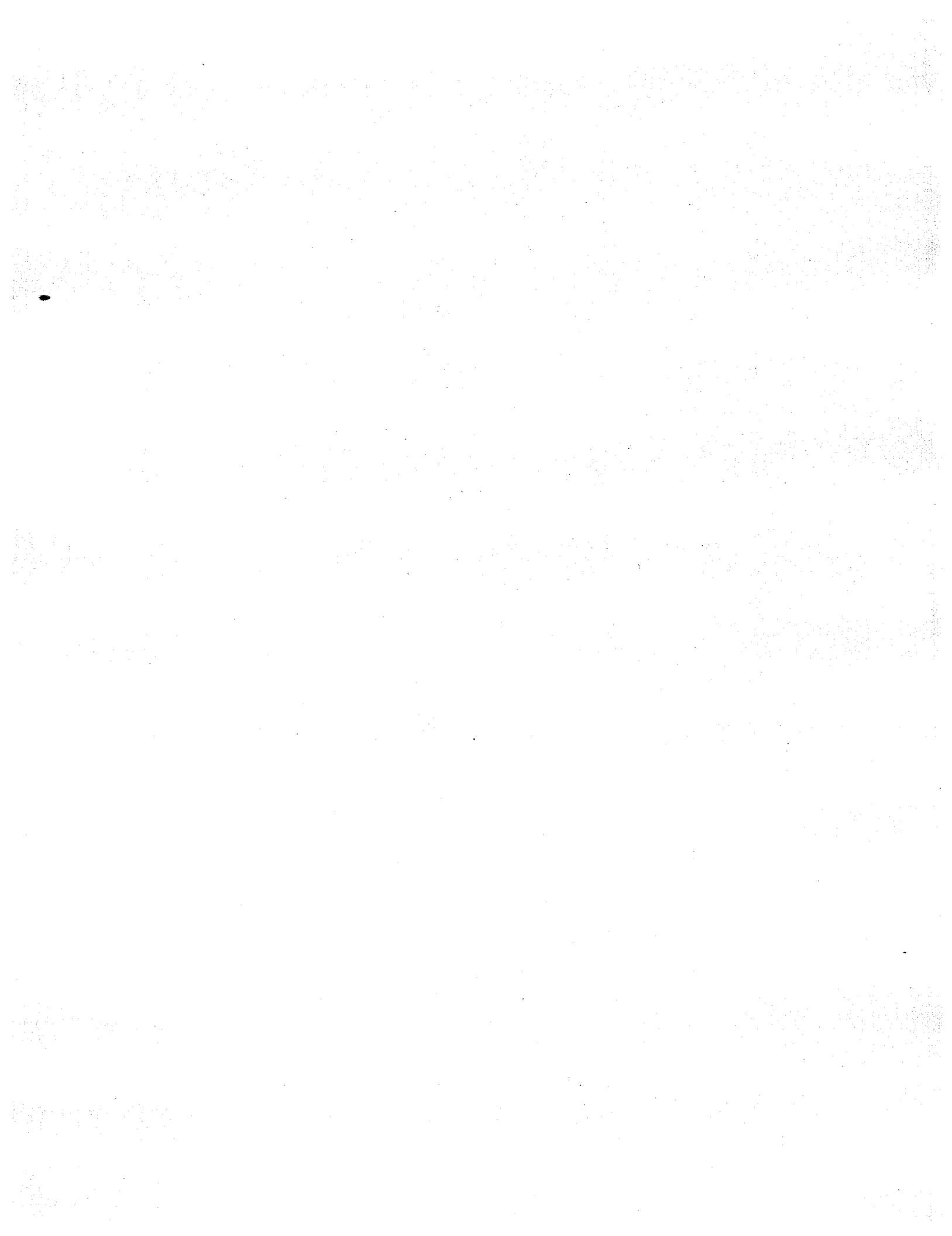


NHEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer /Arsenic  
 Experiment date: 03/13/2009  
 Strain: YG1041  
 Activation :RLAO 100 2X 2ppd

Batch # 46  
 Unhydrolyzed

Sample ID: eq-ml/pl	UCO3125 Uh	UCO0086 Uh	UCO3977Uh	avg.
0	66	66	66	66
0.3	79	82	72	70
0.6	74	72	66	63
1.2	74	83	76	76
3	78	97	100	114
6	69	146	187	184
12	129	169	338	341
rs				0.99
s				23.3

Sample ID: eq-ml/pl	UCO1207 Uh	UCO1106 Uh	UCO3427 Uh	avg.
0	66	66	66	66
0.3	60	84	67	66
0.6	55	96	60	69
1.2	59	133	64	70
3	76	202	78	85
6	75	377	92	82
12	113	406	132	139
rs				0.92
s				5.7





Sample ID: eq-ml/pl	UCO2688 Uh	UCO1025 Uh	UCO1889 Uh
0	66	66	66
0.3	59	55	74
0.6	62	77	50
1.2	68	64	55
3	100	77	62
6	136	107	63
12	148	130	100
		151	
			avg.
			66
			58
			66
			65
			83
			103
			141
			0.99
			6.7

rs  
s

Sample ID: eq-ml/pl	UCO3095 Uh	Blank Uh
0	66	66
0.3	4	61
0.6	0	54
1.2	1	64
3	0	60
6	1	56
12	1	59

rs  
s



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date :03/18/2009  
 Strain: YG1041  
 Activation :RLAO100      2x 2ppd      Batch # 47

SP-	32	43	48	avg.	UCO1457 H	UCOO907 H
SP+	72	69	65	69	69	69
2NF	1909	1842	2035		91	40
2A	1208	1258	1267		137	0
Sample ID:	UCO1740 H				145	3
eq-ml/pl	0	69	69	avg.	122	1
	0.3	77	74		175	0
	0.6	94	97		123	0
	1.2	120	107			2
	3	156	143			
	6	134	149			
	12	172	168			
rs					0.96	
s					68.6	

Sample ID:	UCO1162 H	UCO2308 H	UCOO751 H
eq-ml/pl	0	69	69
	0.3	79	88
	0.6	136	119
	1.2	175	109
	3	111	85
	6	242	116
	12	236	59
rs			
s			
avg.	69	86	69
	90	168	88
	131	109	119
	153	129	133
	169	138	112
	256	168	119
	259	86	54
avg.	0.93		
	71.9		



Sample ID: eq-ml/pl	UCO2128 H	UCO2435 H	UCO2793 H
0	69	69	69
0.3	64	65	63
0.6	77	133	98
1.2	113	166	93
3	81	93	106
6	122	250	142
12	97	710	117

rs  
s  
0.94  
50.0

Sample ID: eq-ml/pl	UCO1150 H	Blank H	***sample #2308 hy- very small pin point colonies
0	69	69	
0.3	63	56	
0.6	98	70	
1.2	93	70	
3	106	69	
6	142	74	
12	117	73	

rs  
s



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date :03/18/2009

Strain: YG1041

Activation :RLAO100

2x 2ppd

Batch #47

Uhydrolyzed

Sample ID: eq-ml/pl	UCO1740 Uh	UCO1457 Uh	UCOO907 Uh
0	69	69	69
0.3	37	74	71
0.6	68	84	80
1.2	58	121	99
3	77	166	152
6	81	250	246
12	88	366	244
			69
			1
			4
			4
			2
			2
			0

rs  
s

0.99  
30.3

Sample ID: eq-ml/pl	UCO1162 Uh	UCO2308 Uh	UCOO751 Uh
0	69	69	69
0.3	79	63	64
0.6	104	72	88
1.2	115	96	87
3	167	131	100
6	248	50	123
12	350	36	158
			69
			68
			125
			84
			103
			141
			100

rs  
s

0.99  
32.5



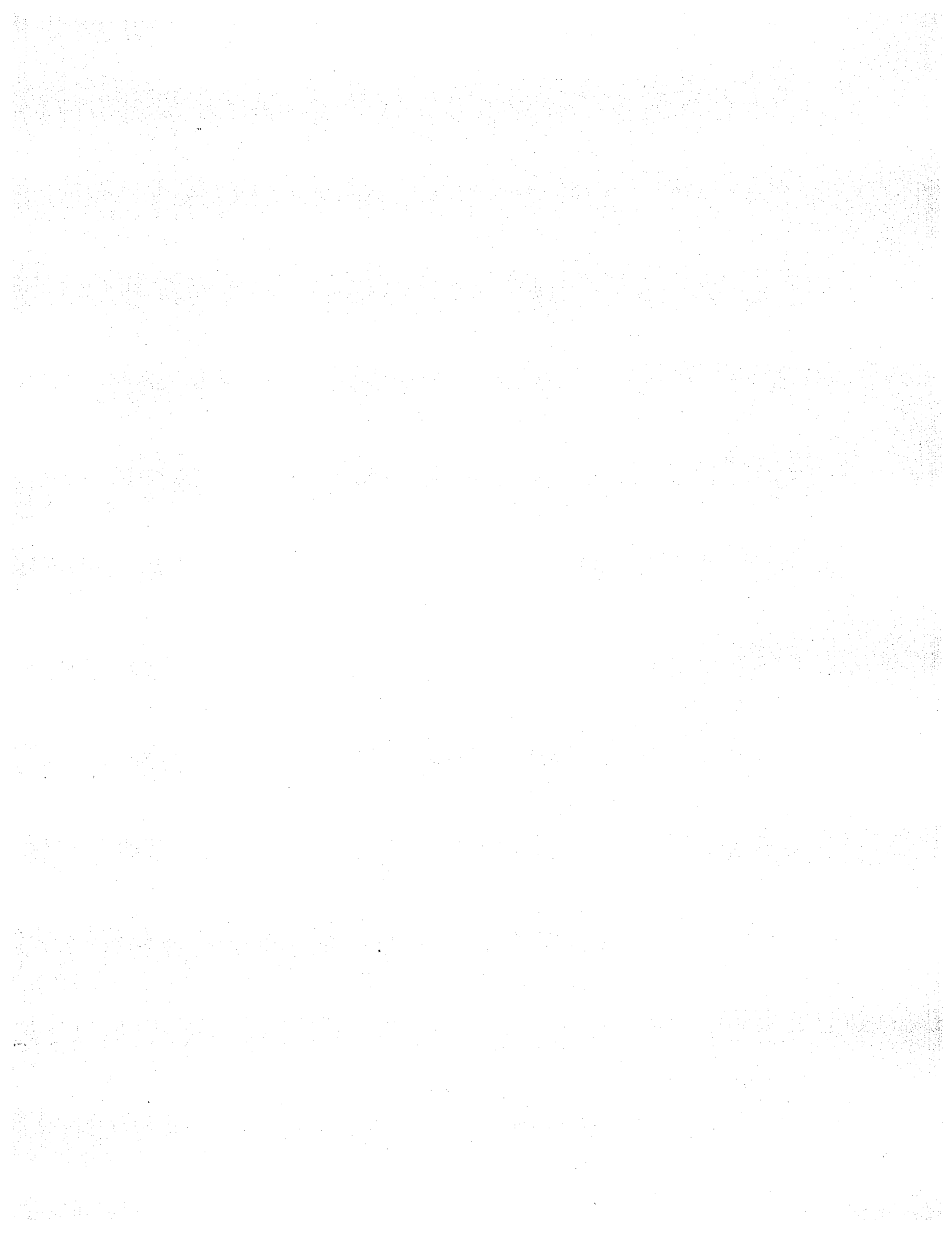


Sample ID: eq-ml/pl	UCO2128 Uh	UCO2435 Uh	UCO2793 Uh	avg.
0	69	69	69	69
0.3	69	71	62	66
0.6	66	55	68	73
1.2	80	78	52	68
3	70	120	63	70
6	68	202	110	109
12	94	442	170	179
				<b>0.94</b>
				9.3

rs  
s

Sample ID: eq-ml/pl	UCO1150 Uh	avg.
0	69	69
0.3	89	61
0.6	89	63
1.2	139	54
3	109	70
6	103	66
12	121	67
		<b>0.98</b>
		29.6

rs  
s



NHEERL/ECD/MTB/DMD/2006-0210  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic

Experiment date :03/31/2009

Strain: YG1041

Activation :RLAO101

2x 2ppd

Batch # 48

Hydrolyzed

Controls:	40	34	40	66	avg
SP-	63	84	50	66	
2NF	1559	1201	1358		
2A	1248	1237	1165		

Sample ID:	UCO2181 H	UCO0540 H	UCO1012 H	avg.
eq-ml/pl	0	66	66	66
	0.3	59	79	78
	0.6	87	78	85
	1.2	87	68	77
	3	75	76	80
	6	70	96	135
	12	56	88	147
rs				0.96
s				16.0

Sample ID:	UCO1192 H	UCO1564 H	UCO2774 H	avg.
eq-ml/pl	0	66	66	66
	0.3	61	77	80
	0.6	81	80	96
	1.2	84	71	107
	3	68	77	159
	6	83	82	224
	12	40	59	226
rs				0.84
s				6.3



Sample ID: eq-ml/pl	UCO3199 H	UCO2809 H	UCO2161 H	avg.
0	66	66	66	66
0.3	67	81	78	75
0.6	94	116	125	119
1.2	95	156	235	240
3	86	103	336	327
6	178	254	190	196
12	88	328	194	254
rs				0.91
s				91.3

avg. 66 66 66 0.93 24.5

Sample ID: eq-ml/pl	UCO3930 H	Blank H
0	66	66
0.3	62	45
0.6	83	52
1.2	80	50
3	87	56
6	83	69
12	100	58
rs		
s		

0.86 13.5



NHEERL/ECD/MTB/DMD/2006-02-ro  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date :03/31/2009  
 Strain: YG1041  
 Activation :RLAO101      2x 2ppd      Batch # 48      Unhydrolyzed

Sample ID: eq-ml/pl	UCO2181 Uh	UCOO540 Uh	UCO1012 Uh
0	66	66	66
0.3	58	60	59
0.6	51	53	53
1.2	60	44	66
3	68	64	87
6	97	64	119
12	103	93	149
			66
			65
			72
			61
			94
			123
			109

rs  
s

Sample ID: eq-ml/pl	UCO1192 Uh	UCO1564 Uh	UCO2774 Uh
0	66	66	66
0.3	72	63	43
0.6	69	67	71
1.2	78	48	72
3	61	30	87
6	86	54	103
12	123	13	101
			66
			49
			64
			65
			87
			99
			80

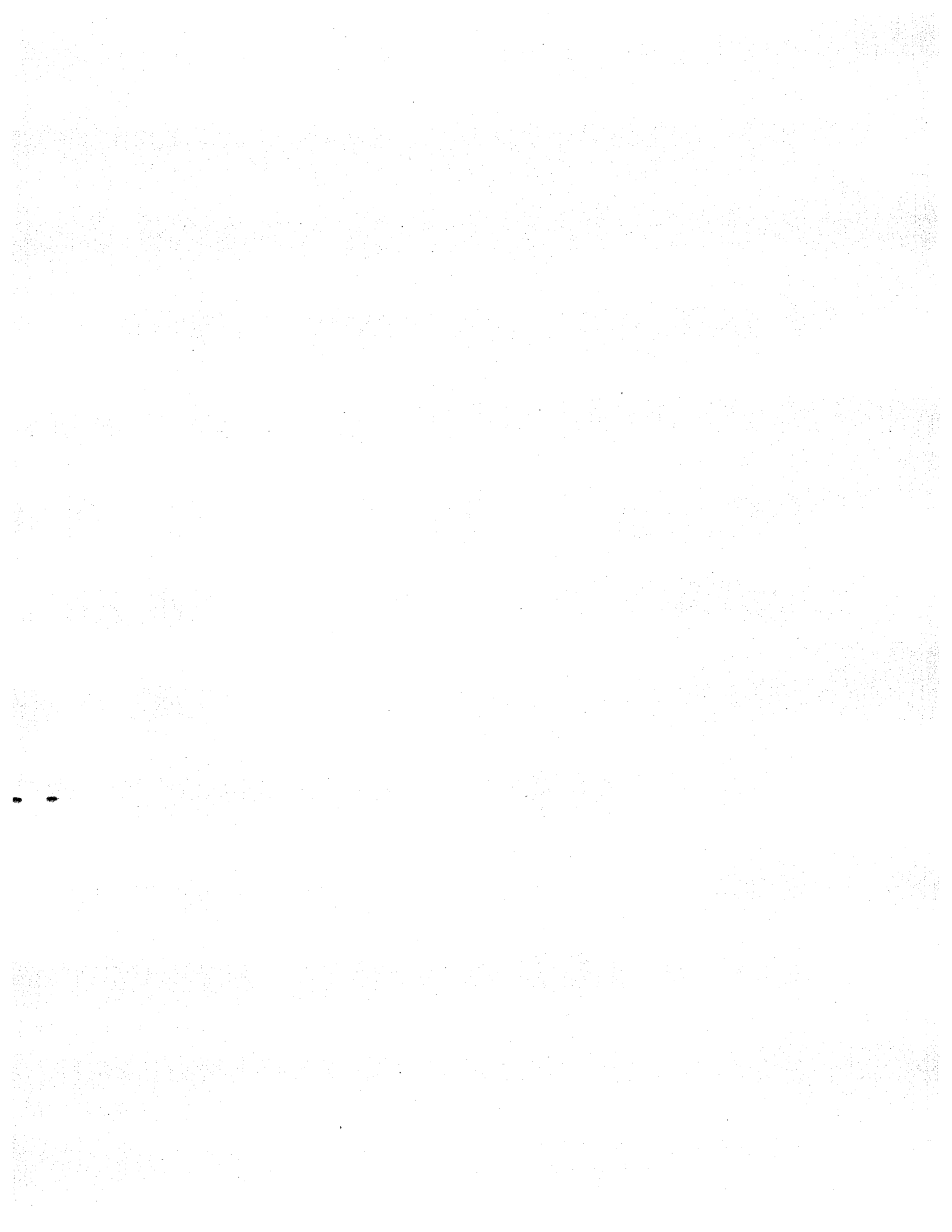
rs  
s





Sample ID:	UCO3199 Uh	UCO2809 Uh	UCO2161 Uh
eq-ml/pl			avg.
0	66	66	66
0.3	62	67	75
0.6	74	92	94
1.2	73	122	113
3	98	145	133
6	140	168	223
12	95	329	329
rs			0.99
s			21.7

Sample ID:	UCO3930 Uh	Blank Uh
eq-ml/pl		
0	66	66
0.3	75	56
0.6	54	57
1.2	75	67
3	60	45
6	70	56
12	98	40
rs		
s		



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date :03/31/2009  
 Strain: YG1041  
 Activation :RLAO101      2x 2ppd      Batch # 49      Hydrolyzed

Controls:

	40	34	40	avg
SP-	63	84	50	66
2NF	1559	1201	1358	
2A	1248	1237	1165	

UCO0042 H

UCO2136 H

UCO3089 H

Sample ID:	eq-ml/pl	66	66	66	66	66	66	66	66	66	66
0	0.3	57	64	66	62	69	73	74	66	66	66
0.6	1.2	66	73	73	73	63	80	57	85	85	85
3	6	78	99	89	89	94	43	94	43	43	43
6	12	95	116	96	96	105	7	105	7	7	7
		122	112	63	63	46	4	46	4	4	4

UCO3178 H

UCO2909 H

UCO1183 H

Sample ID:	eq-ml/pl	66	66	66	66	66	66	66	66	66	66
0	0.3	109	128	66	53	63	69	69	66	66	66
0.6	1.2	157	117	137	80	76	88	88	88	88	88
3	6	140	104	122	77	76	92	92	92	92	92
6	12	30	24	27	96	109	83	127	83	83	83
		22	17	20	114	127	15	130	15	15	15
		88	84	86	115	130					
		avg.		66	53	63	69	69	66	66	66
		avg.		119	80	76	88	88	88	88	88
		avg.		137	77	76	92	92	92	92	92
		avg.		122	96	109	121	127	121	121	121
		avg.		20	114	127	15	130	15	15	15
		avg.		86	115	130					
		avg.		0.93							
		avg.		118.3							

rs  
s

rs  
s



Sample ID:	UCO1078 H	UCO0785 H	UCO0149 H
eq-ml/pl			avg.
0	66	66	66
0.3	46	46	54
0.6	58	68	83
1.2	55	80	61
3	83	138	107
6	77	191	105
12	60	180	98

rs  
s  
0.97  
23.1

Sample ID:	UCO3733 H	Blank H
eq-ml/pl		
0	66	66
0.3	0	56
0.6	0	56
1.2	0	60
3	0	62
6	0	56
12	0	68

rs  
s



NHEERL/ECD/MTB/DMD/2006-02-r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date :03/31/2009  
 Strain: YG1041  
 Activation :RLAO101 2x 2ppd

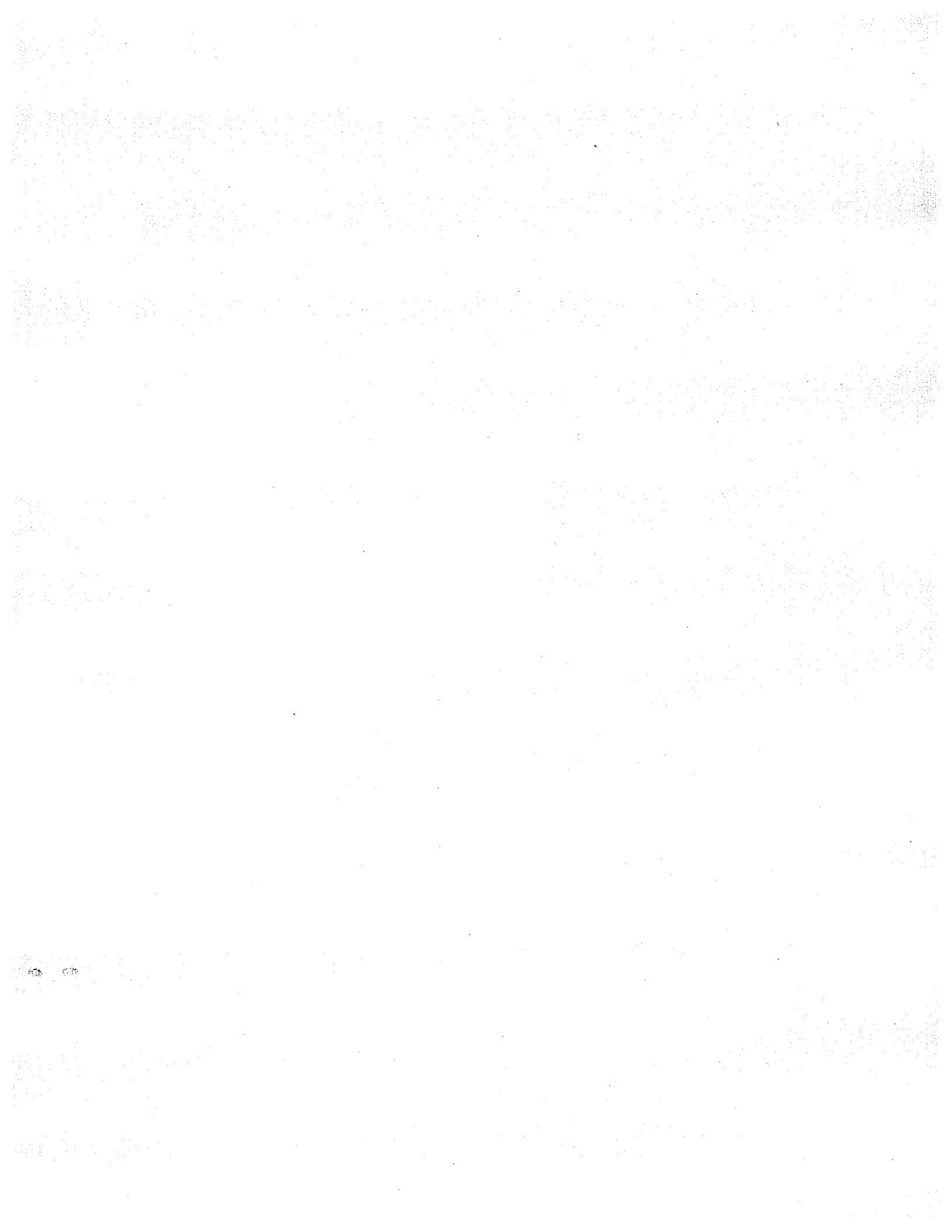
**Unhydrolyzed**

Sample ID:	UCO3089 Uh	Batch # 49	UCO0042 Uh
eq-ml/pl			
0	66	66	66
0.3	56	60	44
0.6	47	75	49
1.2	48	43	56
3	70	77	88
6	74	75	64
12	76	61	73

rs  
s

Sample ID:	UCO1183 Uh	UCO2909 Uh	UCO3178 Uh
eq-ml/pl			
0	66	66	66
0.3	157	65	57
0.6	91	54	38
1.2	35	61	58
3	31	78	77
6	87	88	80
12	10	119	34

rs  
s





UCO0149 Uh

66	66
52	50
50	50
62	46
57	51
68	60
80	75
avg.	158
	110
	84
	59
	61
	62
	54
	66

0.98  
8.5

UCO0785 Uh

66	66
46	62
62	60
61	57
78	90
113	107
150	166

UCO1078 Uh

66	66
62	60
65	55
49	59
55	56
58	86
58	68

Sample ID:  
eq-ml/pl

0
0.3
0.6
1.2
3
6
12

rs  
s

UCO3733 Uh

66	66
1	57
0	59
0	57
0	55
0	52
0	46

Blank Uh

Blank Uh

66
57
59
57
55
52
46

UCO3733 Uh

66
1
0
0
0
0
0

Sample ID:  
eq-ml/pl

0
0.3
0.6
1.2
3
6
12

rs  
s

\*\*\*sample # 3733 toxic



NHEERL/ECD/MTB/DMD/2006-0210  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 4/21/2009  
 Strain: YG1041  
 Activation :RLAO101      2x 2ppd      Batch # 50      Hydrolyzed

Controls:	avg
SP-	45
SP+	57
2NF	1795
2A	1379

Sample ID:	UCO3193 H	UCO1155 H	UCO0484 H
eq-ml/pl			
0	57	57	57
0.3	65	65	63
0.6	94	82	104
1.2	67	97	87
3	83	82	88
6	105	156	6
12	100	166	2
			avg. 57 57 57
			57 61 90
			90 83 83
			78 78 106
			0 0 0

rs      0.83  
 s      8.2      15.3

Sample ID:	UCO0050 H	UCO3447 H	UCO1389 H
eq-ml/pl			
0	57	57	57
0.3	61	65	70
0.6	80	77	94
1.2	80	105	108
3	107	134	148
6	94	116	170
12	105	100	161
			avg. 57 57 57
			57 60 60
			107 107 107
			105 105 107
			60 60 104
			165 165 168
			160 160 160
			0.84 0.84 0.84
			15.7 15.7 15.7

rs  
 s



Sample ID: eq-ml/pl	UCO1278 H	UCO2887 H	UCO1734 H
0	57	57	57
0.3	64	80	96
0.6	45	121	75
1.2	6	226	112
3	0	132	97
6	0	165	75
12	0	189	82

avg.

**57**   **86**   **122**   **221**  
 57   91   123   215   132   168   200  
 57   63   81   108   75   91   115

rs  
s

**0.99**  
138.5

Sample ID: eq-ml/pl	UCO2713 H	Blank H
0	57	57
0.3	64	56
0.6	77	40
1.2	98	47
3	63	49
6	66	50
12	82	54

rs  
s



NHEERL/ECD/MTB/DMD/2006-02:r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 4/21/2009  
 Strain: YG1041

Activation : RLAO101      2x 2ppd      Batch # 50      Uhydrolyzed

Sample ID: eq-ml/pl	UCO3193 Uh	UCO1155 Uh	UCOO484 Uh
0	57	57	57
0.3	60	72	63
0.6	82	76	63
1.2	66	80	78
3	63	110	118
6	66	152	176
12	75	180	0
			avg. 57
			57
			75
			49
			23
			5
			0
			4
			2
			2

rs  
s

1.0  
17.5

Sample ID: eq-ml/pl	UCO0050 Uh	UCO3447 Uh	UCO1389 Uh
0	57	57	57
0.3	62	62	53
0.6	66	63	79
1.2	60	97	54
6	81	80	72
12	77	87	106
	64	74	107
			57
			54
			64
			56
			91
			107
			116
			103

rs  
s





Sample ID: eq.-ml/pl	UCO1278 Uh	UCO2887 Uh	UCO1734 Uh	avg.
0	57	57	57	57
0.3	59	77	90	65
0.6	22	104	114	81
1.2	24	124	133	82
3	12	169	176	89
6	10	231	271	114
12	6	262	360	119
				<b>0.88</b>
				8.1

rs  
s

Sample ID: eq.-ml/pl	UCO2713 Uh	Blank Uh	avg.
0	57	57	57
0.3	65	63	58
0.6	66	65	71
1.2	85	60	84
3	63	65	98
6	71	63	113
12	64	70	115
			<b>0.96</b>
			29.8

rs  
s

\*\*\*sample # 0484 toxic



NHEERL/ECD/MTB/DMD/2006-02.r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 4/21/2009  
 Strain: YG1041  
 Activation :RLAO101      2x 2ppd      Batch # 51      Hydrolyzed

Controls:  
 SP-                    38      37      45      avg  
 SP+                    50      50      70      57  
 2NF                    1871    1800    1795  
 2A                    1361    1366    1379

Sample ID: eq-ml/pl	UCO1031 H	UCO1130 H	UCO2628 H	avg.
0	57	57	57	57
0.3	57	40	59	65
0.6	76	51	82	85
1.2	100	55	129	121
3	140	83	239	181
6	157	89	184	232
12	150	117	162	173
	<b>0.97</b>	<b>0.91</b>	<b>0.98</b>	<b>0.98</b>
	26.3	5.4	42.1	42.1

rs  
s

Sample ID: eq-ml/pl	UCO3312 H	UCO1407 H	UCO0917 H	avg.
0	57	57	57	57
0.3	61	67	71	66
0.6	57	72	74	72
1.2	83	89	98	103
3	114	124	214	220
6	109	140	346	333
12	125	98	421	433
	<b>0.98</b>	<b>0.99</b>	<b>0.99</b>	<b>0.99</b>
	21.4	22.3	48.2	48.2

rs  
s



Sample ID:	UCO3918 H	UCO1633 H	UCO2270 H
eq-ml/pl			avg.
0	57	57	57
0.3	56	58	59
0.6	67	67	72
1.2	71	61	80
3	94	95	103
6	78	127	108
12	98	154	71

rs  
s

Sample ID:	UCOO189 H	Blank H
eq-ml/pl		
0	57	57
0.3	69	55
0.6	44	41
1.2	77	51
3	125	65
6	178	56
12	229	37

rs  
s

avg.  
0.99  
13.8

avg.  
0.96  
20.1



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 4/21/2009

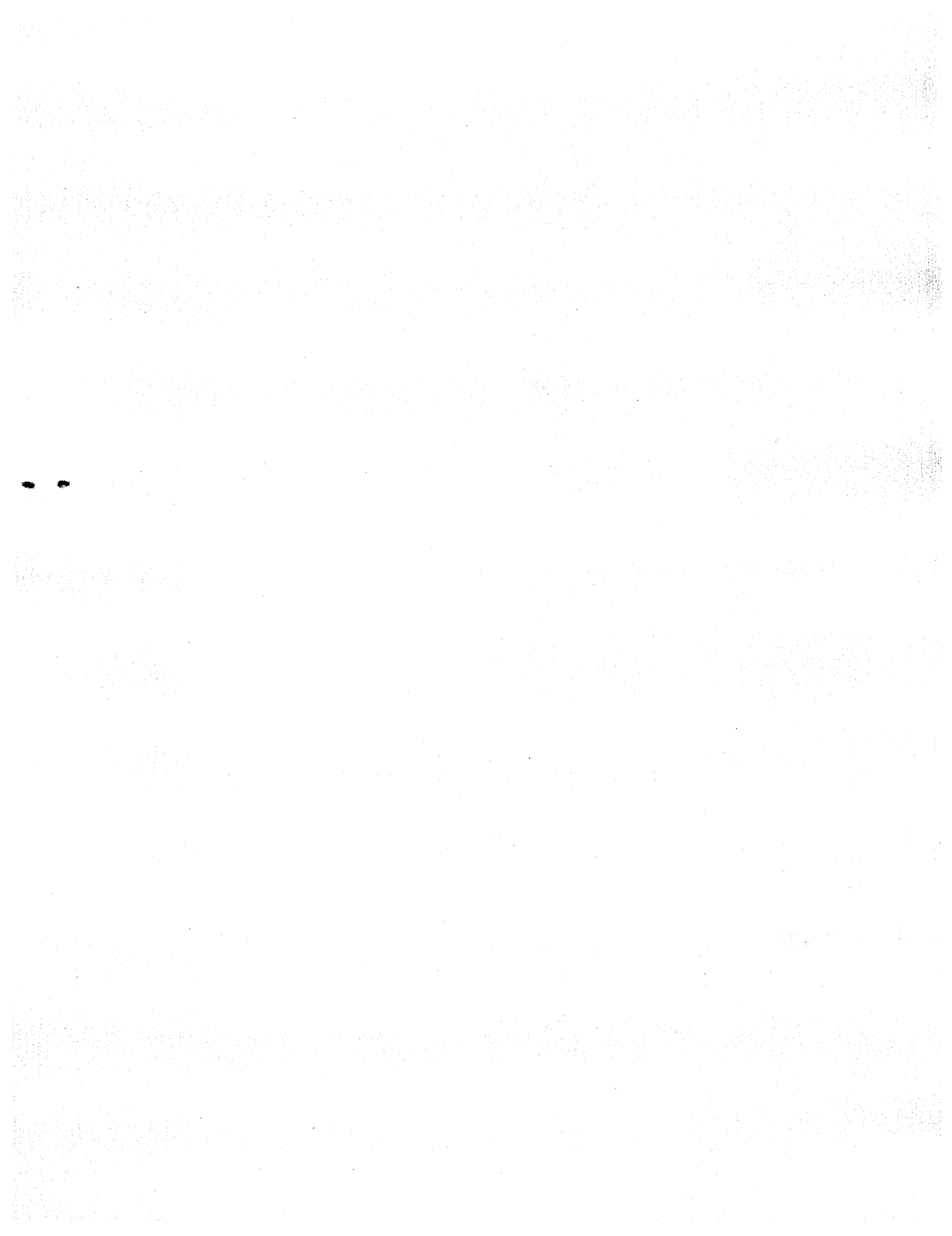
Strain: YG1041

Activation :RLAO101 2x 2ppd

Batch # 51 Uhydrolyzed

Sample ID:	UCO1031 Uh	UCO1130 Uh	UCO2628 Uh	avg.
eq-ml/pl				
0	57	57	57	57
0.3	58	68	75	60
0.6	56	47	73	80
1.2	63	63	99	86
3	95	67	190	198
6	111	62	295	267
12	182	98	490	414
rs				0.99
s				33.5

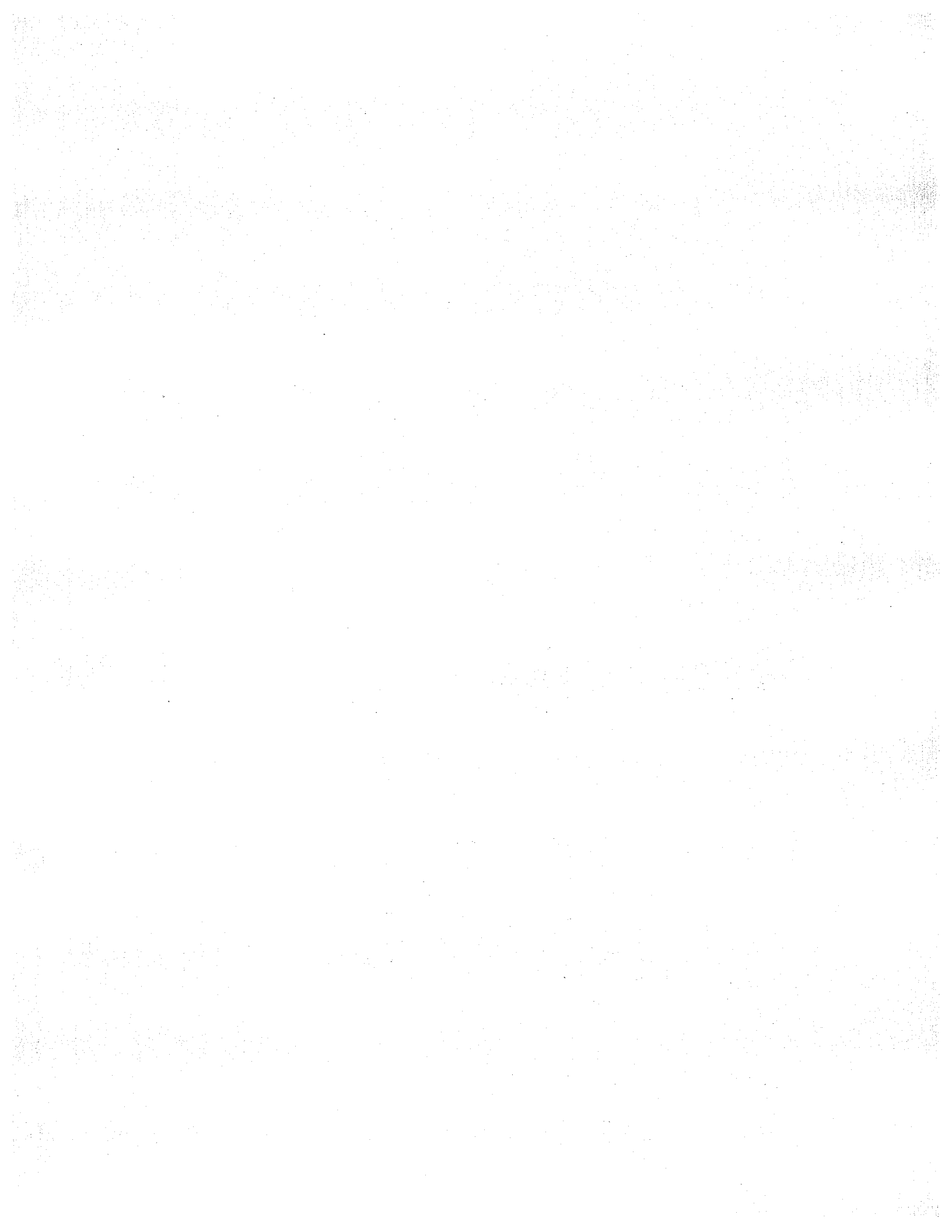
Sample ID:	UCO3312 Uh	UCO1407 Uh	UCOO917 Uh	avg.
eq-ml/pl				
0	57	57	57	57
0.3	76	54	49	54
0.6	69	43	65	73
1.2	60	99	107	81
3	67	113	139	134
6	98	168	236	239
12	125	204	408	404
rs				1.0
s				29.4





Sample ID:	UCO3918 Uh	UCO1633 Uh	UCO2270 Uh
eq-ml/pl			
0	57	57	57
0.3	39	56	63
0.6	47	70	59
1.2	69	74	63
3	108	58	80
6	82	92	97
12	63	109	81
rs			
s			

Sample ID:	UCOO189 Uh	Blank Uh
eq-ml/pl		
0	57	57
0.3	85	59
0.6	63	61
1.2	53	50
3	70	56
6	74	42
12	49	46
rs		
s		



NHEERL/ECD/MTB/DMD/2006-0210  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic

Experiment date : 4/30/2009

Strain: YG1041

Activation :RLAO101

2x 2ppd

Batch # 52

Hydrolyzed

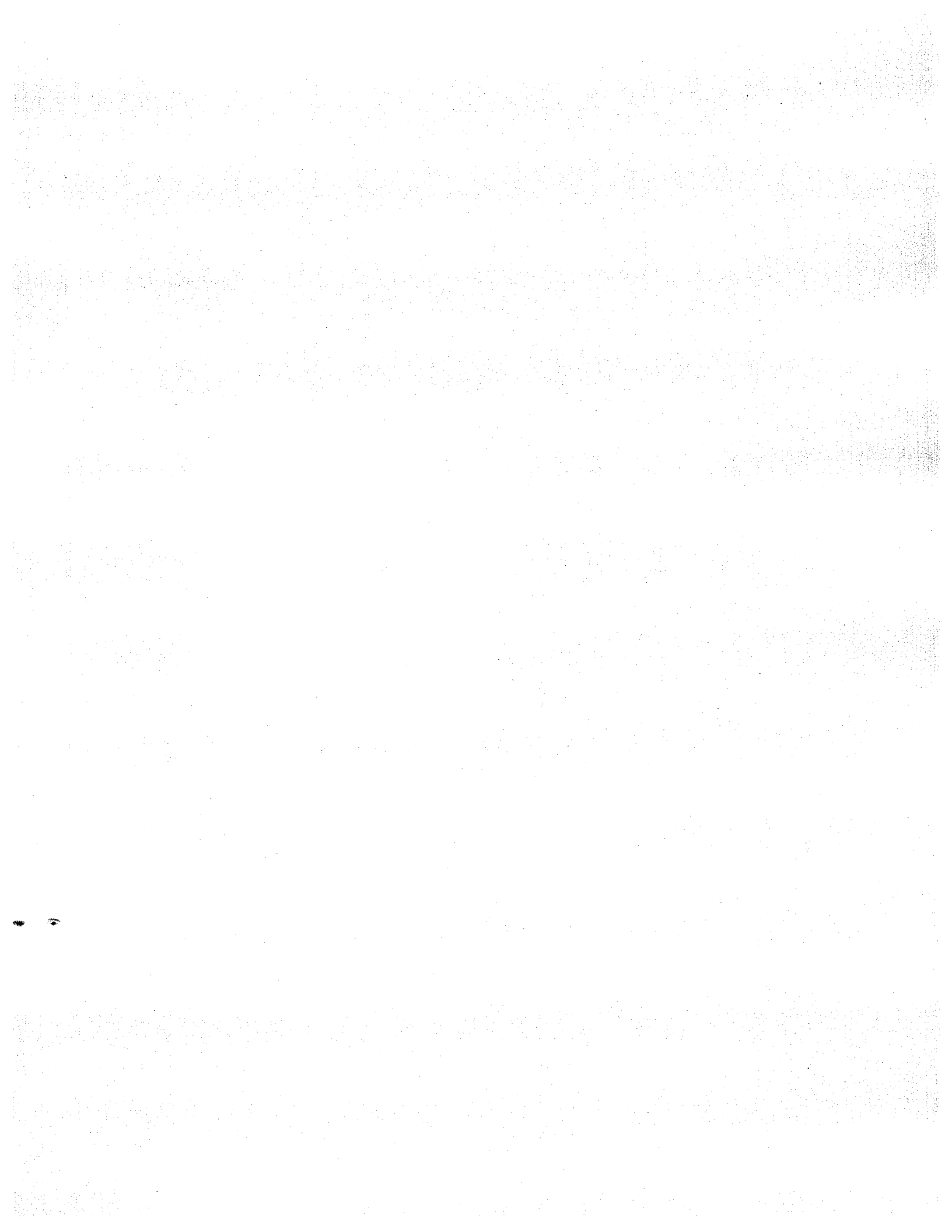
Controls:	avg	
SP-	37	40
SP+	57	56
2NF	2035	2010
2A	987	1105
		1256

Sample ID:	UCO0379 H		UCO2655 H		UCO1704 H		avg.
eq-ml/pl							
0	58	58	58	58	58	58	58
0.3	57	75	66	106	90	81	86
0.6	11	92	102	216	93	85	89
1.2	98	102	100	263	94	91	93
3	103	133	118	341	101	115	108
6	123	124	124	434	133	141	137
12	125	122	124	199	220	95	102

rs	0.70	0.88	0.87
s	17.9	173.0	10.6

Sample ID:	UCO3393 H		UCO3038 H		UCO0510 H		avg.
eq-ml/pl							
0	58	58	58	58	58	58	58
0.3	121	91	106	87	79	79	79
0.6	151	159	155	149	84	97	91
1.2	248	208	228	141	89	84	87
3	249	246	248	196	91	116	104
6	290	287	289	225	122	122	122
12	123	311	267	237	86	114	100

rs	0.99	0.89	0.82
s	141.2	90.2	8.6



Sample ID: eq-ml/pl	UCO2824 H				UCO0474 H				UCO3558 H				
0	58	58	58	58	58	58	58	58	58	58	58	58	58
0.3	76	97	87	83	83	83	83	74	76	75	76	74	75
0.6	126	108	117	79	96	96	90	90	101	96	101	90	96
1.2	150	145	148	67	58	58	96	96	118	107	118	96	107
3	146	140	143	55	51	51	103	103	84	94	84	103	94
6	114	89	102	61	58	58	118	118	105	112	105	118	112
12	89	129	109	12	19	19	113	113	125	119	125	113	119
rs													
s	0.97				0.97				0.92				
	74.5				74.5				40.8				

Sample ID: eq-ml/pl	UCO0256 H				Blank H			
0	58	58	58	58	58	58	58	58
0.3	85	61	73	63	63	63	63	63
0.6	85	111	98	63	63	63	63	63
1.2	76	98	87	64	64	64	64	64
3	130	116	123	61	61	61	61	61
6	122	100	111	66	66	66	66	66
12	130	129	130	68	68	68	68	68
rs								
s	0.81				0.81			
	18.7				18.7			



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 4/30/2009  
 Strain: YG1041  
 Activation :RLAO101      2x 2ppd      Batch # 52      Unhydrolyzed

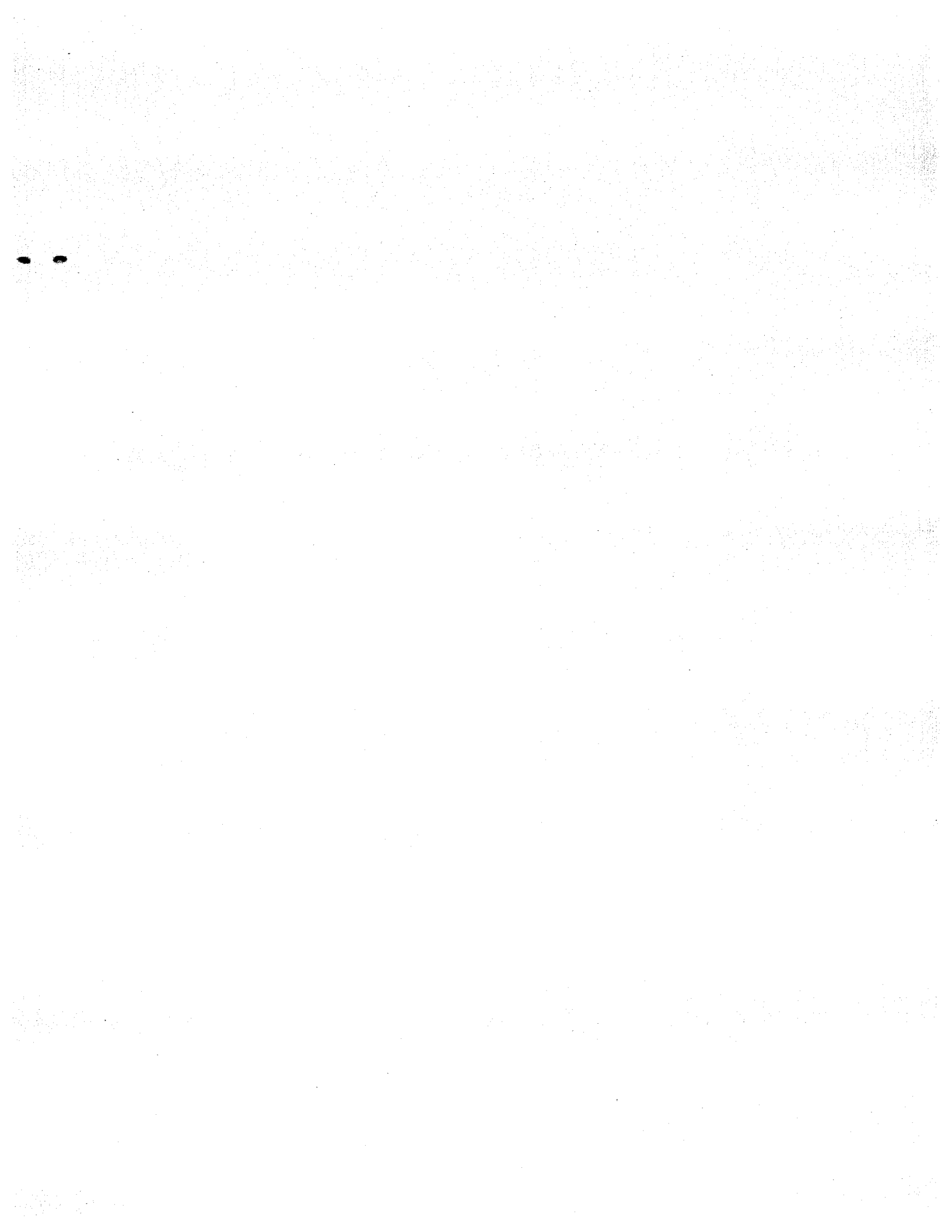
Sample ID: eq-ml/pl	UCO0379 Uh	UCO2655 Uh	UCO1704 Uh	avg.
0	58	58	58	58
0.3	58	77	71	74
0.6	65	89	106	99
1.2	59	81	112	97
3	11	143	145	144
6	10	245	216	231
12	0	297	260	279
				110

rs  
s

0.98  
27.2

Sample ID: eq-ml/pl	UCO3393 Uh	UCO3038 Uh	UCO0510 Uh
0	58	58	58
0.3	50	62	62
0.6	102	69	79
1.2	98	69	57
3	85	82	103
6	105	104	101
12	125	110	85
			58
			48
			69
			67
			94
			89
			95

rs  
s





Sample ID:  
eq-ml/pl

UCO2824 Uh

58  
61  
89  
86  
83  
110  
112

UCO0474 Uh

58  
68  
74  
68  
74  
84  
60

UCO3558 Uh

58  
75  
70  
63  
55  
73  
86

rs  
s

Sample ID:  
eq-ml/pl

UCO0256 Uh

58  
61  
55  
59  
75  
73  
117

Blank Uh

58  
49  
53  
57  
57  
59  
61

rs  
s

\*\*\*sample #0379 unhydrolyzed  
toxic  
\*\*\*sample #3393 very dark red  
\*\*\*sample 0474 very dark red  
toxic



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic

Experiment date : 4/30/2009

Strain: YG1041

Activation :RLAO101

2x 2ppd

Batch # 53

Hydrolyzed

Controls:	avg	
SP-	37	40
SP+	57	60
2NF	2035	2010
2A	987	1105
		1256

Sample ID:	UCO2615 H		UCO2203 H		UCO2577 H	
eq-ml/pl	avg.		avg.		avg.	
0	58	58	58	58	58	58
0.3	47	67	57	54	55	60
0.6	74	80	71	81	86	62
1.2	84	88	86	76	81	84
3	104	90	97	116	115	101
6	128	156	142	136	139	128
12	139	154	147	170	179	122

rs 0.97  
 s 13.7

Sample ID:	UCO1680 H		UCO3104 H		UCO0673 H	
eq-ml/pl	avg.		avg.		avg.	
0	58	58	58	58	58	58
0.3	92	95	94	64	71	74
0.6	132	140	136	92	84	81
1.2	160	168	164	96	96	95
3	337	348	343	131	135	106
6	560	555	558	130	159	104
12	67	38	131	144	138	103

rs 0.99  
 s 82.7

rs 0.98

s 24.4



Sample ID: eq-ml/pl	UCO1070 H	UCO1896 H	UCO3758 H	avg.
0	58	58	58	58
0.3	79	78	82	86
0.6	76	96	85	89
1.2	95	103	97	102
3	93	112	112	180
6	72	125	145	290
12	69	92	87	235
rs				0.99
s				37.6
				0.84
				10.6

Sample ID: eq-ml/pl	UCO3073 H	Blank H
0	58	58
0.3	83	50
0.6	77	61
1.2	80	65
3	97	70
6	80	63
12	39	70
rs		
s		



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 4/30/2009

Strain: YG1041  
 Activation :RLAO101

Batch # 53 Unhydrolyzed

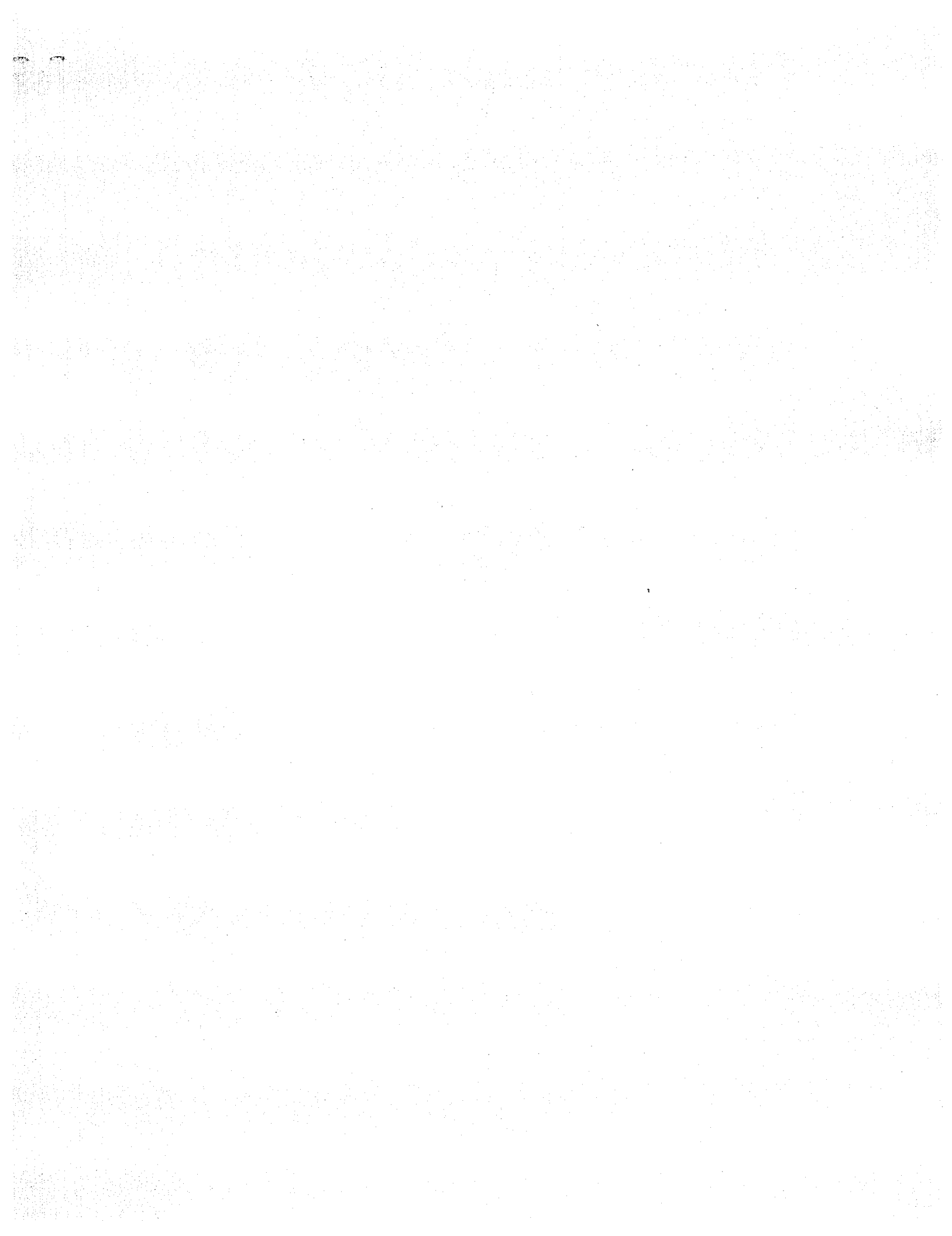
2x 2ppd

Sample ID: eq-ml/pl	UCO2615 Uh	UCO2203 Uh	UCO2577 Uh	avg.
0	58	58	58	58
0.3	59	65	56	60
0.6	57	70	81	71
1.2	41	72	73	76
3	70	79	105	57
6	82	80	121	116
12	106	92	128	129
				0.81
				6.1

rs  
s

Sample ID: eq-ml/pl	UCO1680 Uh	UCO3104 Uh	UCO0673 Uh	avg.
0	58	58	58	58
0.3	84	73	61	69
0.6	84	61	61	71
1.2	126	67	68	75
3	140	107	83	92
6	4	100	97	95
12	0	117	125	103
				1.0
				60.3

rs  
s





Sample ID:  
eq-ml/pl

UCO1070 Uh

58  
54  
58  
79  
70  
71  
68

UCO1896 Uh

58  
86  
64  
62  
75  
90  
100

UCO3758 Uh

58  
78  
97  
81  
70  
97  
9

rs  
s

Sample ID:  
eq-ml/pl

UCO3073 Uh

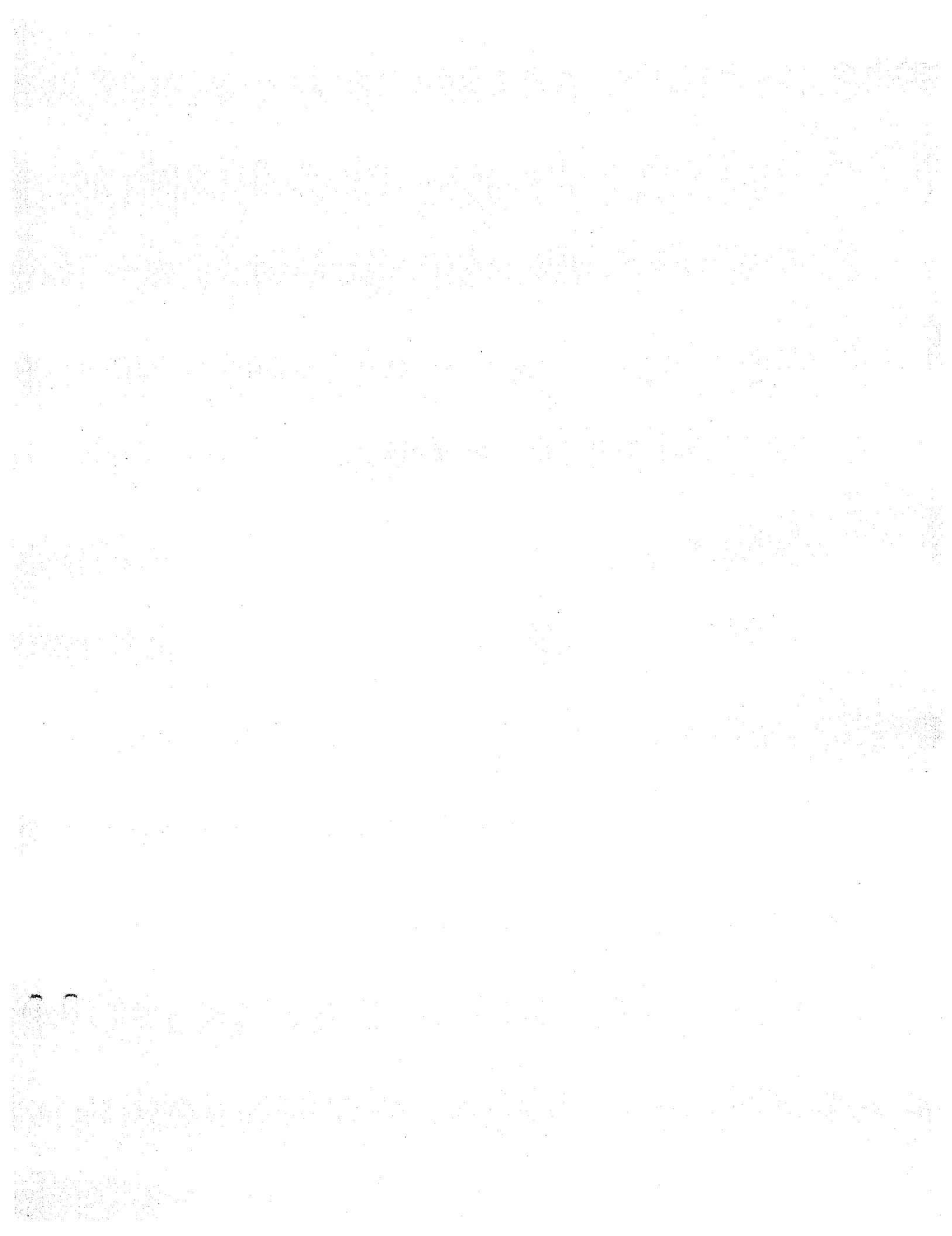
58  
66  
58  
66  
56  
75  
97

rs  
s

Blank Uh

58  
65  
66  
69  
70  
60  
63

\*\*\*sample #  
1680 ,3758 unhydrolyzed  
toxic



NHEERL/ECD/MTB/DMD/2006-02f0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 5/19/2009

Strain: YG1041

Activation :RLAO102

2x 2ppd

Batch # 54

Hydrolyzed

Controls:

	avg	
SP-	61	41
SP+	83	83
2NF	1809	1920
2A	1312	1200

Sample ID:	UCO1908 H	UCO1719 H	UCO0591 H	avg.
eq-ml/pl				
0	83	83	83	83
0.3	70	59	74	84
0.6	93	85	123	123
1.2	88	67	161	158
3	94	77	190	190
6	90	74	192	205
12	82	65	88	75

rs  
s

0.94  
67.8

Sample ID:	UCO1803 H	UCO3467 H	UCO1378 H	avg.
eq-ml/pl				
0	83	83	83	83
0.3	86	58	71	69
0.6	119	76	90	84
1.2	121	75	107	97
3	183	94	98	105
6	298	94	104	131
12	502	101	140	130

rs  
s

0.99  
35.9

0.90  
8.9



Sample ID: eq-ml/pl	UCO0649 H	UCOO646 H	UCO1335 H
0	83	83	83
0.3	0	69	62
0.6	1	69	3
1.2	0	51	1
3	7	55	2
6	3	48	1
12	2	0	3

rs  
s

Sample ID: eq-ml/pl	UCO3196 H	Blank H
0	83	83
0.3	82	68
0.6	107	65
1.2	102	60
3	134	60
6	138	62
12	120	51

rs  
s

\*\*\*sample # 0649 , 1335 toxic



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 5/19/2009  
 Strain: YG1041  
 Activation : RLAO102      2x 2ppd      Batch # 54      Unhydrolyzed

Sample ID: eq-ml/pi	UCO1908 Uh	UCO1719 Uh	UCO0591 Uh	avg.
0	83	83	83	83
0.3	58	88	70	75
0.6	56	74	70	115
1.2	68	82	70	133
3	88	79	81	180
6	34	100	81	267
12	25	77	69	213
			236	0.98
				30.9

rs  
s

Sample ID: eq-ml/pi	UCO1803 Uh	UCO3467 Uh	UCO1378 Uh
0	83	83	83
0.3	64	68	74
0.6	63	66	91
1.2	72	62	72
3	90	80	78
6	130	103	124
12	116	97	128

rs  
s





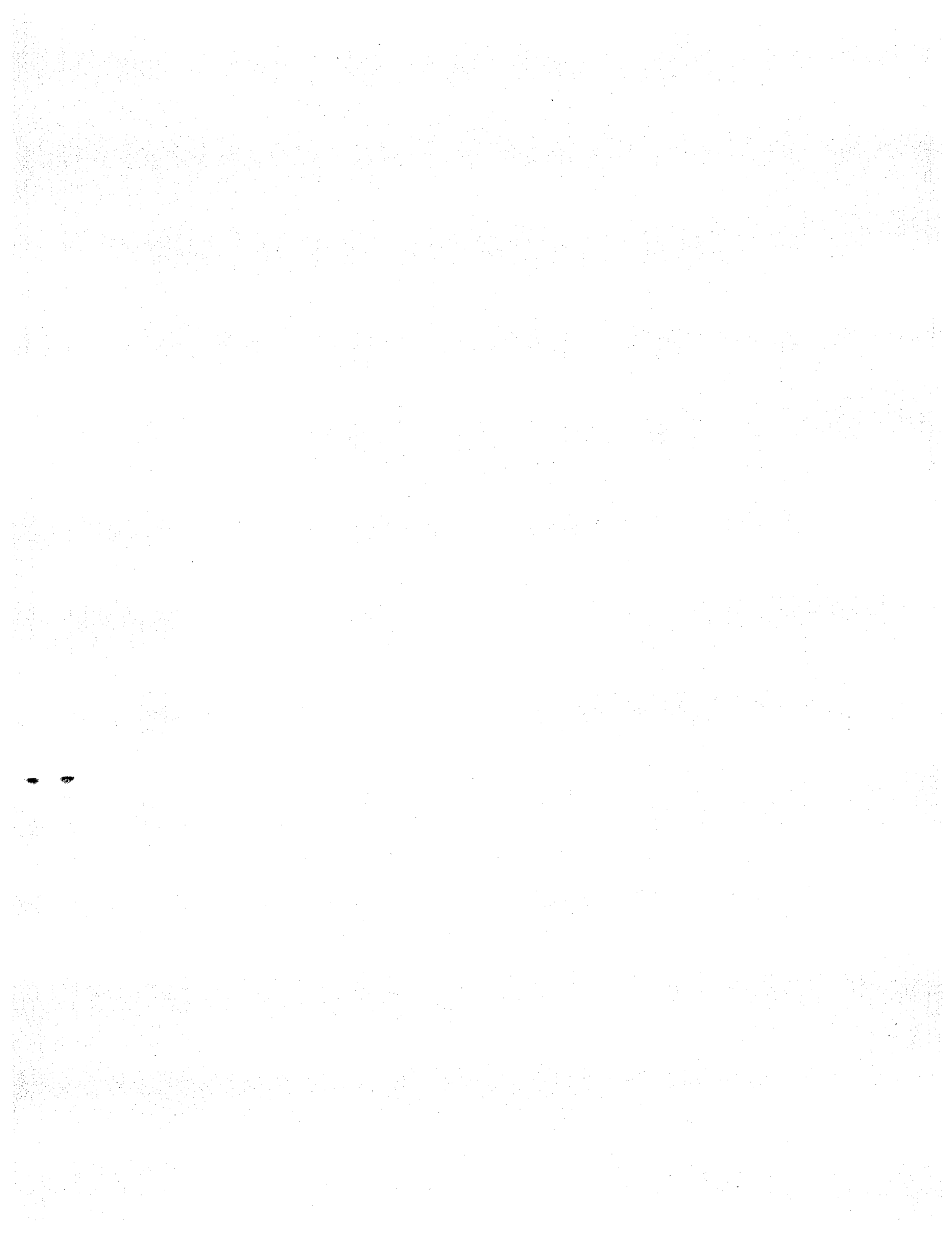
Sample ID: eq-ml/pl	UCO0649 Uh	UCO0646 Uh	UCO1335 Uh
0	83	83	83
0.3	2	78	58
0.6	3	75	12
1.2	0	85	30
3	0	91	25
6	1	34	7
12	0	12	7

rs  
s

Sample ID: eq-ml/pl	UCO3196 Uh	Blank Uh
0	83	83
0.3	77	50
0.6	73	44
1.2	69	45
3	60	60
6	83	62
12	101	65

rs  
s

\*\*\*sample # 0649, 1335 toxic



NHEERL/ECD/MTB/DMD/2006-0210  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 5/19/2009  
 Strain: YG1041  
 Activation :RLAO102      2x 2ppd      Batch # 55      Hydrolyzed

Controls:	avg	
SP-	61	41
SP+	83	83
2NF	1809	1920
2A	1312	1200

Sample ID:	UCO0166 H	UCO3487 H	UCO2359 H
eq-ml/pl			
0	83	83	83
0.3	60	62	68
0.6	67	80	64
1.2	64	74	77
3	97	59	111
6	87	8	74
12	94	1	46

Sample ID:	UCO2196 H	UCO3591 H	UCO0325 H
eq-ml/pl			
0	83	83	83
0.3	74	64	67
0.6	69	78	64
1.2	84	81	86
3	129	107	86
6	178	133	74
12	221	146	66

rs	s	avg.
		83
		70
		75
		85
		129
		190
		217
		0.97
		20.0







NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 5/19/2009  
 Strain: YG1041  
 Activation : RLAO102      2x 2ppd      Batch # 55      Unhydrolyzed

Sample ID: eq-ml/pl	UCO0166 Uh	UCO3487 Uh	UCO2359 Uh
0	83	83	83
0.3	54	66	75
0.6	64	50	68
1.2	60	46	68
3	43	16	86
6	79	1	47
12	71	0	0

rs  
s

Sample ID: eq-ml/pl	UCO2196 Uh	UCO3591 Uh	UCO0325 Uh
0	83	83	83
0.3	64	72	53
0.6	73	74	65
1.2	72	73	95
3	71	65	69
6	137	81	77
12	175	111	121
		avg.	
		83	83
		59	70
		69	74
		65	71
		47	63
		124	90
		176	114

rs  
s

0.81  
9.4





Sample ID:	UCO1375 Uh	UCO3597 Uh	UCO0973 Uh
eq-ml/pl	83	83	83
0	53	61	69
0.3	48	69	71
0.6	62	80	84
1.2	90	98	104
3	74	146	120
6	0	229	12
12			
			avg.
			83
			56
			72
			87
			105
			150
			256

rs  
s  
0.98  
15.5

Sample ID:	UCO0933 Uh	Blank Uh
eq-ml/pl	83	83
0	46	61
0.3	39	69
0.6	67	64
1.2	71	60
3	86	41
6	114	45
12		

rs  
s



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 5/27/2009  
 Strain: YG1041  
 Activation :RLAO102

2x 2ppd Batch # 56 Hydrolyzed

Controls: avg  
 SP- 53 54 46  
 SP+ 76 68 62  
 2NF 2000 1838 1668  
 2A 966 986 1101

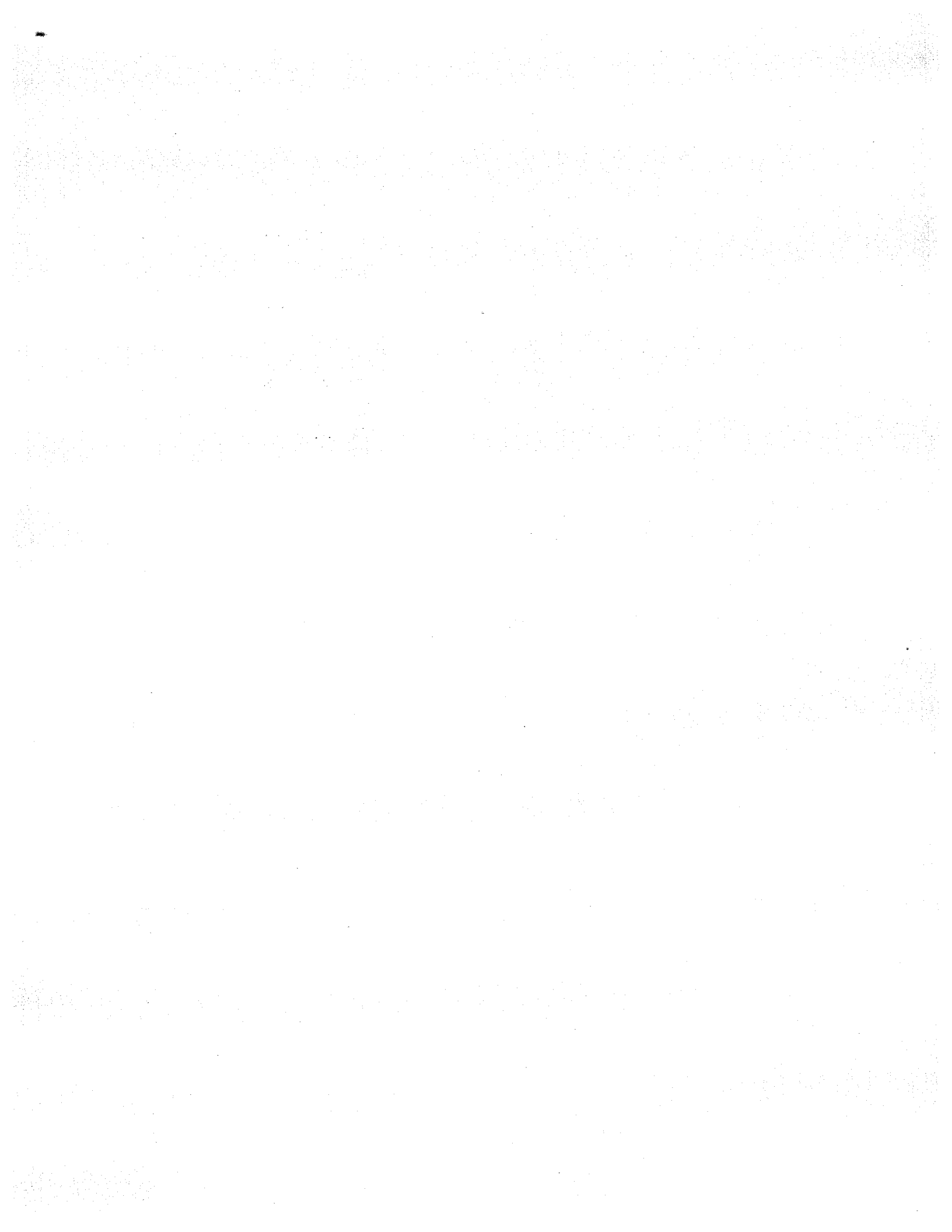
Sample ID:	UCO2440 H	UCO2295 H	UCO2738 H
eq-ml/pl	69	69	69
0	97	81	91
0.3	109	87	98
0.6	118	97	102
1.2	112	103	103
3	119	94	64
6	100	113	118
12			52

TS  
S

Sample ID:	UCO0704 H	UCO3664 H	UCO2319 H	avg
eq-ml/pl	69	69	69	69
0	84	92	87	105
0.3	109	100	104	110
0.6	98	132	126	109
1.2	105	113	125	134
3	101	85	120	123
6	120	120	110	125
12			77	94

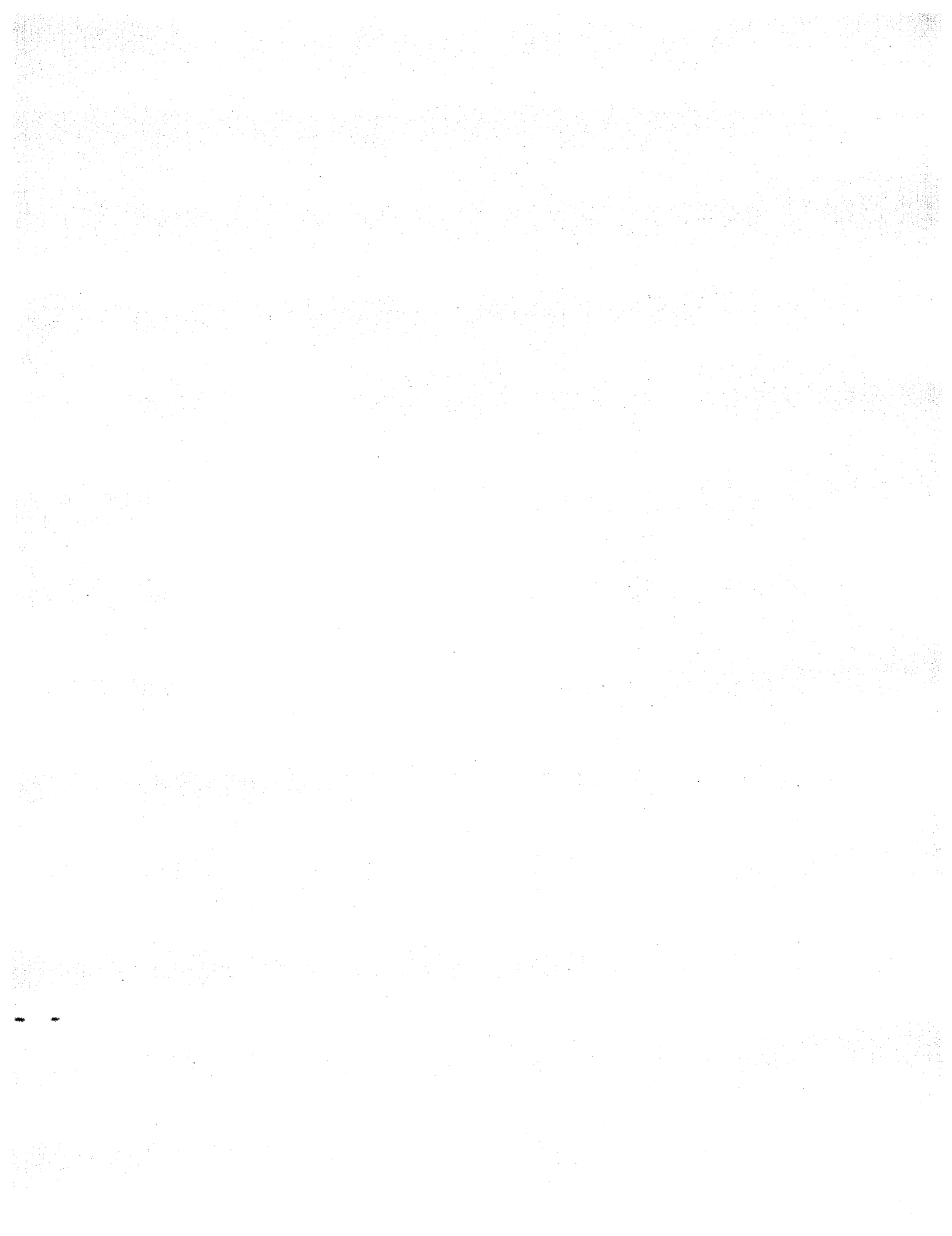
TS  
S

0.85  
37.9



Sample ID:	UCO1327 H	UCO1065 H	UCO2050 H	avg
eq-ml/pl				
0	69	69	69	69
0.3	80	104	88	91
0.6	169	118	101	100
1.2	172	110	134	114
3	234	136	135	130
6	324	122	143	154
12	172	89	137	151
rs				0.91
s				35.2

Sample ID:	UCO1995 H	Blank	avg
eq-ml/pl			
0	69		69
0.3	112		68
0.6	93		67
1.2	105		74
3	152		70
6	165		76
12	116		78
rs			0.89
s			38.3



NHEERL/ECD/MTB/DMD/2006-0210  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic

Experiment date : 5/27/2009

Strain: YG1041

Activation : RLAO102

2x 2ppd

Batch # 56

Unhydrolyzed

Sample ID: eq-ml/pl	UCO2440 Uh	UCO2295 Uh	UCO2738 Uh	avg
0	69	69	69	69
0.3	97	78	90	84
0.6	91	77	117	108
1.2	97	72	104	106
3	91	88	162	158
6	88	82	144	144
12	32	108	168	200
				0.82
				9.5

rs  
s

Sample ID: eq-ml/pl	UCO0704 Uh	UCO3664 Uh	UCO2319 Uh	avg
0	69	69	69	69
0.3	86	102	97	92
0.6	90	78	86	85
1.2	85	116	105	101
3	155	126	188	189
6	100	112	132	124
12	87	117	128	118
				0.96
				38.7

rs  
s





Sample ID:  
eq-ml/pl

	UCO1327 Uh	UCO1065 Uh	UCO2050 Uh
0	69	69	69
0.3	96	53	66
0.6	106	92	88
1.2	132	74	101
3	158	85	100
6	309	103	108
12	682	110	104

avg  
69  
87  
98  
124  
167  
304  
375

rs  
s

0.99  
37.5

Sample ID:  
eq-ml/pl

	UCO1995 Uh	Blank Uh
0	69	69
0.3	79	23
0.6	74	40
1.2	93	42
3	103	62
6	74	62
12	73	59

rs  
s

\*\*\*sample # 2738 hydrolyzed, unhydrolyzed very dark red oily particulate matter  
\*\*\* sample # 1065, 1327, very dark red



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 5/27/2009

Strain: YG1041

Activation :RLAO102

2x 2ppd

Batch # 57

Hydrolyzed

Controls:	53	54	46	avg
SP-	76	68	62	69
SP+	2000	1838	1668	
2NF	966	986	1101	
2A				

Sample ID:	UCO1569 H	UCOOO54 H	UCO2411 H	avg
eq-ml/pl	0	69	69	69
	0.3	91	104	98
	0.6	103	105	104
	1.2	165	169	167
	3	230	237	234
	6	204	183	194
	12	134	148	141
				69
				90
				81
				93
				116
				135
				67
				69
				75
				91
				77
				137
				104
				63
				69
				82
				115
				114
				146
				174
				174
				167
				0.93
				23.0

rs  
s

Sample ID:	UCO1612 H	UCO3970 H	UCO1440 H
eq-ml/pl	0	69	69
	0.3	83	80
	0.6	82	86
	1.2	102	90
	3	100	117
	6	109	127
	12	85	138
			69
			85
			91
			102
			124
			129
			104
			69
			108
			75
			103
			121
			128
			107

rs  
s



Sample ID:	UCO1739 H	UCOO367 H	UCO1663 H
eq-ml/pl			
0	69	69	69
0.3	86	78	75
0.6	95	82	94
1.2	108	84	99
3	118	99	115
6	133	113	129
12	178	131	123
			103

rs  
s  
0.93  
7.9

Sample ID:	UCOO717 H	Blank
eq-ml/pl		
0	69	69
0.3	79	71
0.6	96	71
1.2	114	77
3	158	76
6	268	71
12	345	71

rs  
s  
0.96  
25.8



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 5/27/2009

Strain: YG1041

Activation :RLAO102

2x 2ppd

Batch # 57

Unhydrolyzed

Sample ID: eq-ml/pl	UCO1569 Uh	UCOOO54 Uh	UCO2411 Uh	avg.
0	69	69	69	69
0.3	70	82	79	85
0.6	66	66	87	91
1.2	77	87	79	91
3	87	76	106	93
6	85	78	117	122
12	34	31	166	165

rs  
s

0.95  
6.9

Sample ID: eq-ml/pl	UCO1612 Uh	UCO3970 Uh	UCO1440 Uh
0	69	69	69
0.3	54	86	74
0.6	76	100	98
1.2	83	90	73
3	88	93	108
6	99	98	96
12	126	119	122

rs  
s





Sample ID: eq-ml/pl	UCO1739 Uh	UCOO367 Uh	UCO1663 Uh
0	69	69	69
0.3	87	70	74
0.6	85	84	82
1.2	128	50	61
3	122	89	102
6	112	94	104
12	135	107	111

rs  
s

Sample ID: eq-ml/pl	UCOO717 Uh	Blank Uh
0	69	69
0.3	84	80
0.6	86	83
1.2	116	78
3	142	84
6	215	79
12	350	80

rs  
s

avg. 69 89 88 112 134 232 363  
0.99 24.2

\*\*\*sample # 0054, 1739 very dark



NHEERL/ECD/MTB/DMD/2006-02r0  
 Urinary Mutagenicity Study for New England Bladder Cancer/ Arsenic  
 Experiment date : 5/29/09  
 Strain: YG1041  
 Activation :RLAO101      2x 2ppd      Batch # 58      Hydrolyzed

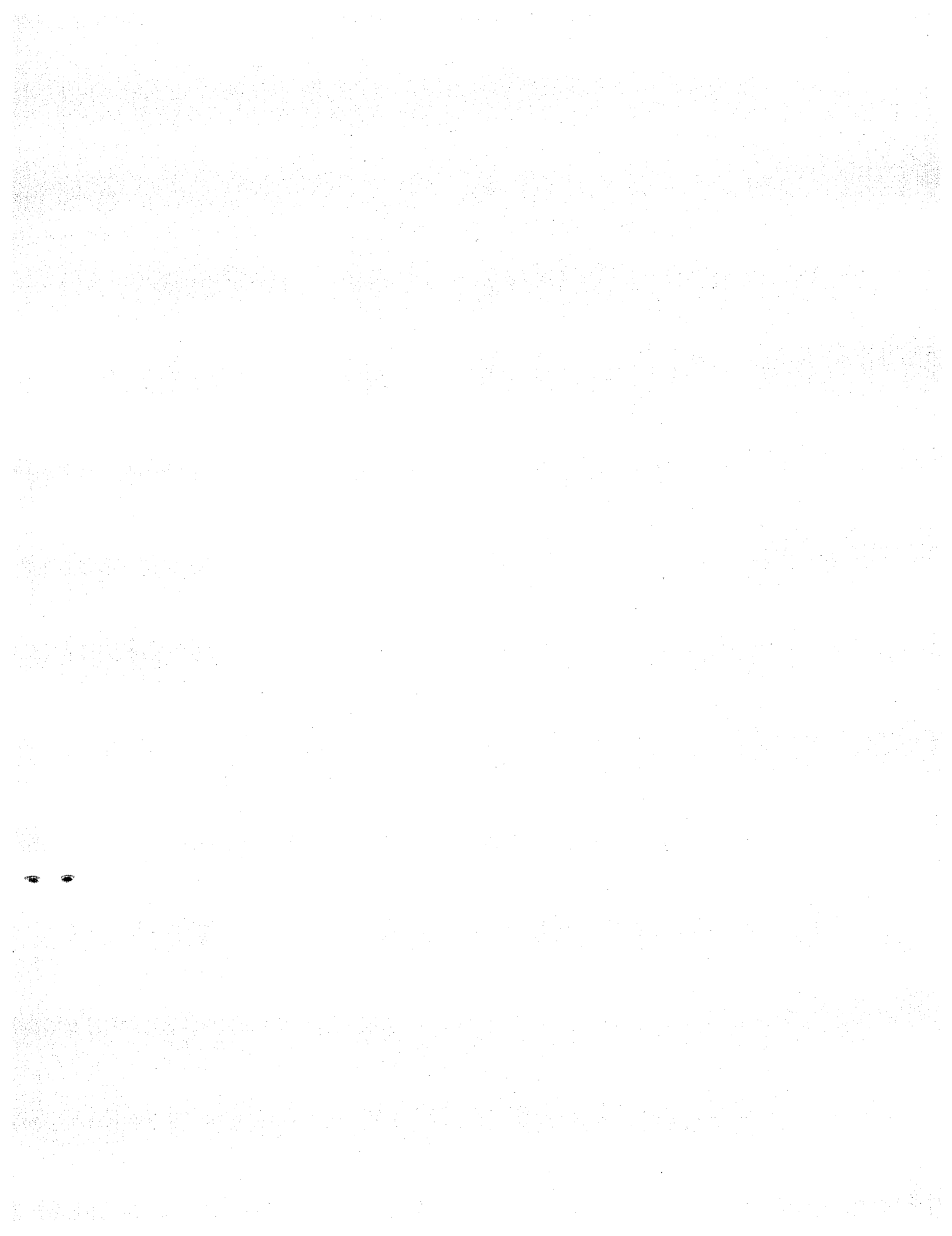
Controls:	52	49	48	avg
SP-	50	62	83	65
2NF	1875	1816	1799	
2A	1192	1014	1076	

Sample ID:	eq-ml/pl	UCO3176 H	UCOO986 H	UCO1448 H	avg.
0	65	65	65	65	65
0.3	152	164	87	70	72
0.6	142	250	86	120	107
1.2	240	226	73	128	119
3	262	305	90	160	156
6	303	293	84	205	197
12	322	467	69	199	212

rs	0.94
s	218.3

Sample ID:	eq-ml/pl	UCO1401 H	UCO3365 H	Blank	avg.
0	65	65	65	65	65
0.3	81	65	0	40	40
0.6	94	86	1	54	54
1.2	79	98	3	60	60
3	109	134	1	65	65
6	133	138	0	63	63
12	20	65	1	70	70

rs	0.89
s	11.4



Unhydrolyzed

Sample ID: eq-ml/pl	UCO3176 H	UCO0986 H	UCO1448 H	avg.
0	65	65	65	65
0.3	80	74	47	56
0.6	84	112	81	84
1.2	108	75	89	86
3	171	78	82	103
6	229	88	108	139
12	478	88	129	183
		75	178	
		94		
rs				0.96
s				10.0

Sample ID: eq-ml/pl	UCO1401 H	UCO3365 H	Blank	avg.
0	65	65	65	65
0.3	77	1	0	68
0.6	65	3	0	69
1.2	92	0	2	63
3	82	1	0	54
6	85	0	0	56
12	8	1	0	60
rs				
s				

\*\*\*sample # 1401 very dark brownish red  
sample # 3365 toxic

