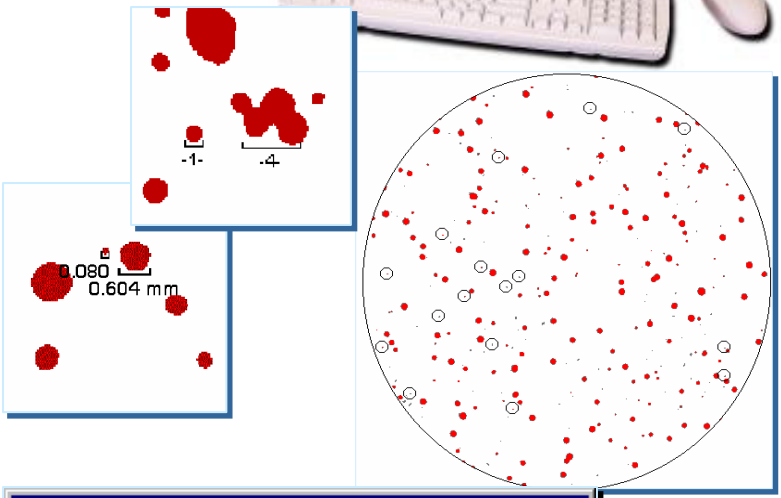
High Res Automated Colony Counter



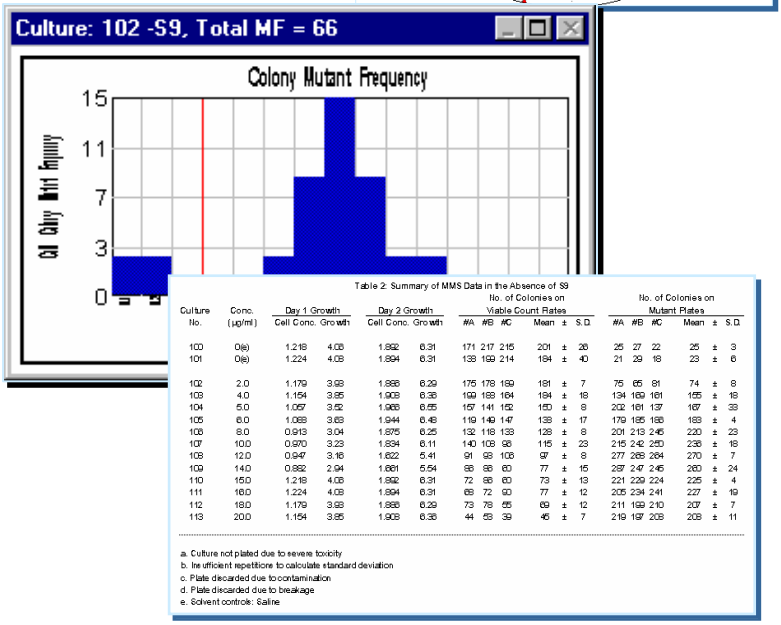


Table 2. Summary of MMS Data in the Absence of S9

Culture No.	Conc. (µg/ml)	Day 1 Growth Cell Conc.	Day 1 Growth	Day 2 Growth Cell Conc.	Day 2 Growth	No. of Colonies on Viable Count Plates #A	#B	#C	Mean ± S.D.	No. of Colonies on Mutant Plates #A	#B	#C	Mean ± S.D.
100	0(e)	1.218	4.06	1.892	6.31	171	217	215	201 ± 26	25	27	22	25 ± 3
101	0(e)	1.224	4.08	1.894	6.31	139	199	214	184 ± 40	21	29	18	23 ± 6
102	2.0	1.179	3.93	1.888	6.29	175	178	169	181 ± 7	75	65	81	74 ± 8
103	4.0	1.154	3.85	1.908	6.36	199	168	164	194 ± 18	134	169	161	155 ± 18
104	5.0	1.057	3.52	1.988	6.65	157	141	152	150 ± 9	202	161	137	167 ± 33
105	6.0	1.068	3.63	1.944	6.48	119	149	147	138 ± 17	179	185	188	183 ± 4
106	8.0	0.913	3.04	1.875	6.25	132	118	133	128 ± 8	201	213	245	220 ± 23
107	10.0	0.870	3.23	1.834	6.11	140	108	98	115 ± 23	215	242	260	238 ± 18
108	12.0	0.947	3.16	1.822	5.41	91	93	108	97 ± 8	277	269	264	270 ± 7
109	14.0	0.882	2.94	1.661	5.54	66	86	80	77 ± 15	257	247	245	260 ± 24
110	15.0	1.218	4.06	1.892	6.31	72	86	80	79 ± 13	221	229	224	225 ± 4
111	18.0	1.224	4.08	1.894	6.31	69	72	90	77 ± 12	205	234	241	227 ± 19
112	18.0	1.179	3.93	1.888	6.29	73	78	65	69 ± 12	211	199	210	207 ± 7
113	20.0	1.154	3.85	1.908	6.36	44	53	39	45 ± 7	219	197	209	208 ± 11

a. Culture not plated due to severe toxicity
b. Insufficient repetitions to calculate standard deviation
c. Plate discarded due to contamination
d. Plate discarded due to breakage
e. Solvent controls: Saline

- Multi-Assay
  - Soft agar MLA
  - Ames
- Complete Assay Automation
  - True High Res Image Capture
    - 2560x1920 pixels
    - 3.4µm pixel size
  - Proprietary Background Correction eliminates false counts from:
    - bubbles,
    - precipitation,
    - background lawn,
    - varying agar depth,
    - lighting variations
  - Counts all Colonies greater than or equal to 100 microns.
  - Separates Colonies
  - Grabs, Corrects, Sizes and Counts
    - < 1 second / dish
    - Review Images of Plate
  - GLP Lab Setting
    - Audit Trails
    - Security Levels
    - Password Protection
    - Change Logs
  - Statistical Reports
    - Formatted for Regulatory Submissions
    - Immediately Available at end of counting
    - No Transcription Errors
- Multi Application
  - Pharmaceutical
  - Research
  - CROs

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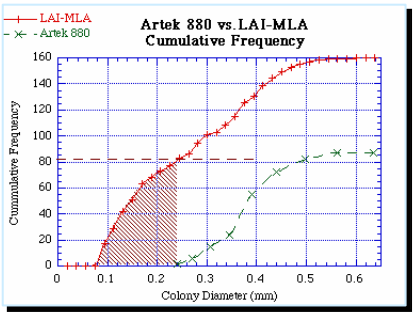
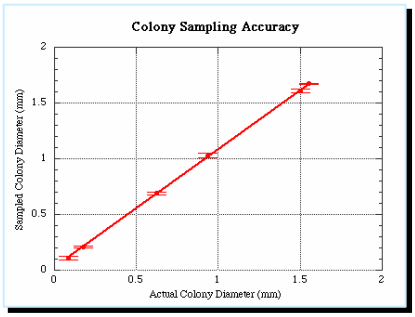
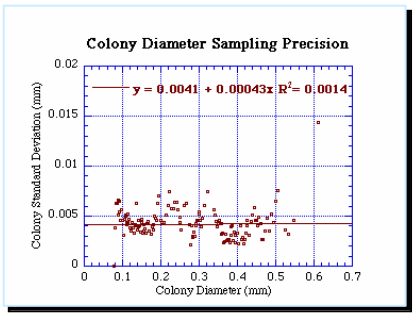
LAI High-Res Automated Colony Counter Specifications

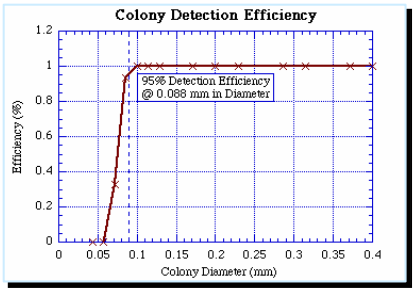
System Components

- High Res Digital Camera
  - •2560x1920 pixels
  - •5 MP Color Firewire Camera
- Electro-Luminescent Light Source provides flat, glare-free illumination
- High Speed Pentium Computer speeds plate acquisition from Capture to Counting
- Proprietary Algorithms for Background Correction, Counting and Colony Separation
- Study Protocols for Soft-Agar MLA, Ames Assay
- Statistical Report Macros for Soft-Agar MLA and Ames Assay









♦ Comparative Sizing

An effective pixel size of less than 40µm, based on the imaging of an 80mm dish, provides a 4 pixel footprint for a 100 µm colony diameter based on the Nyquist sampling criteria. 100µm diameter approximately corresponds to 125 20µm diameter cells.

♦ Accuracy

The accuracy of the system was determined by sampling a distributed number of circular dots of a known diameter and comparing the sampled diameter to the true diameter

♦ Precision

Precision is defined as a system's ability to repeatably measure the same size for a given colony. The system's precision is measured as the sampled area variance of a colony with respect to the size of the colony and the number of times sampled

♦ Detection efficiency

The 95% colony efficiency detection limit has been determined to be 0.088mm diameter. Note that colonies with a diameter smaller than 0.088 mm (below the 95% detection limit) can be detected by the system but less than 95% of the time.. The smallest detectable colony is 0.06mm in diameter

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