Micro lab final

**E. Coli**: gram neg, rod, single

**Psuedomona aeruginosa**: gram neg, rod, single, pos motility

**Bacillus cerus:** gram pos, rod, chain

**Micrococcis luteus**: gram pos, round, single

**Strep pyrogenes:** gram pos, round, chain

**Staph aureus:** gram pos, round, cluster, neg motility

**Clostridium sporogenes:** gram pos, rod, single

**Bacillus subtilis:** gram pos, rod, single

**Pseudomona fluorescens:** gram neg, rod, single

**Terms**

**Free o2**

Strict aerobe: needs o2 to survive

Strict anaerobe (obligate): cannot survive in presence of o2

Facultative anaerobe: can grow in either presence or absence of o2; better with o2 though

Microaerophiles: does well in reduced-oxygen conditions, but still require o2

YTA: yeast extract tryptone agar

BCPG: Bromcresol-purple glucose agar

**Temp**

Psychrophile: likes temps between 0-20\* C

Mesophile: like temps between 21-40\* C

Thermophiles: likes temps between 41-100\* C

Maximum growth temp: the highest temp at which cell division occurs

Optimum temp: the temp at which the fastest cell division occurs

**pH**

acidophiles: pH 1.0-5.4 usually organisms that produce acid from cellular respiration

Neutrophiles: pH 5.5-8.4

Alkaliphiles: pH 8.5-11.5 putrefying microbes (decomposers)

Most prefer human blood: pH 7.4

**Transformation**

Transformation: uptake of naked DNA and incorporation into a recipient cell’s DNA

Competent: cells capable of taking up high molecular weight DNA (able to transform)

Auxotrph: a mutated bacterium that lacks the ability to synthesize an essential nutrient and must obtain it from it’s surroundings

Heat shock genes: genes expressed when e.coli is subjected to 42\* C. Aid bacteria in surviving at extreme temps. Necessary for the uptake of DNA.

SDS: sodium dodecyl sulfate, detergent used to crack open a cell and release it’s DNA

X-plate: regular plate (reference lab picture)

y-plate: contains antibiotic streptomycin

Acinetobacter calcoaceticus: Used in lab to make streptomycin-resistant culture

**Results**

**O2**

e.coli: facultative anerobe

m. luteus: aerobe

Clostridium sporogenes: anaerobe

**Temp**

5\* all negative

37\* all positive

55\* all negative

**pH**

pH= 7.0 pH= 9.0

Bacillus subtilis: Large neg

Pseudomonas fluorescens: Small neg

M. Luteus: Large neg

E.Coli: Large small

**Bacterial Transformation**

Str^s area= no growth

Str^r area= growth

Str^s+ str^r dna = growth