

The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance. The main title is centered in a large, bold, black font.

MUTATION SCREENING BY REPLICA PLATING

351 MIC

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MUTATIONS

• **SCREENING FOR AUXOTROPHS BY REPLICA PLATING**

- A PROTOTROPHIC STRAIN OF BACTERIA IS TREATED WITH A MUTAGENIC AGENT (FOR EXAMPLE, NITROSOGUANIDINE, OR ULTRAVIOLET RADIATION).
- MOST OF THE CELLS IN THE CULTURE WILL DIE. HOWEVER, A FEW MAY SURVIVE THE MUTAGENESIS. THERE IS A HIGH FREQUENCY OF MUTANTS AMONG THE SURVIVORS, SOME OF WHICH MAY BE AUXOTROPHIC MUTANTS.
- A SAMPLE OF THE CULTURE IS SPREAD ON A COMPLETE MEDIUM (FOR EXAMPLE, TRYPTIC SOY AGAR). THIS IS THE “MASTER PLATE.”
- THE MASTER PLATE IS INCUBATED SO THE SURVIVORS CAN FORM COLONIES.

MUTATIONS

• **SCREENING FOR AUXOTROPHS (CONT.)**

- EACH COLONY FROM THE MASTER PLATE IS TRANSFERRED TO A MINIMAL MEDIUM PLATE (CAPABLE OF ONLY SUPPORTING THE GROWTH OF PROTOTROPHIC COLONIES) AND A COMPLETE MEDIUM PLATE (CAPABLE OF SUPPORTING BOTH PROTOTROPHIC AND AUXOTROPHIC COLONIES).
- COLONIES THAT GROW ON THE COMPLETE MEDIUM BUT NOT ON THE MINIMAL MEDIUM ARE AUXOTROPHS. THEY ARE ISOLATED ONTO FRESH COMPLETE MEDIUM, AND THE CAUSE OF THEIR AUXOTROPHY (WHAT SUPPLEMENT THEY NEED FOR GROWTH) IS DETERMINED.
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