Colony morphology gives important clues as to the identity of their constituent microorganisms.
The Winner:

- Most disgusting bacterial colony I have ever seen...
Comes From a Hot Pot in Yellowstone Park >>>>>>
The coolest colonies I’ve ever seen >>>
Made from glowing bacteria.
How many different types of bacteria are growing on this plate?
Colony Morphology

- Size:
- Colony shape:
- Margin (edge):
- Elevation:
- Texture:
- Light Transmission:
- Color:
Colony Size

Dependent on the:
- type of organism
- the growth medium
- the number of colonies present on a plate
- culture medium characteristics.

Colony size usually stabilizes after a day or two of incubation.
Colony Shape:

Shape:
- Punctiform (under 1 mm diameter)
- Round
- Filamentous
- Irregular

a. Common colony shapes
- Rhizoid
- Spindle (lens)
Fillimentous

*Mycobacterium fortuitum* (blood agar)
Rhizoid

http://exploringtheinvisible.com

Bacillus mycoides
<table>
<thead>
<tr>
<th>Margin:</th>
<th>Entire</th>
<th>Curled</th>
<th>Undulate</th>
<th>Lobate</th>
<th>Filamentous</th>
<th>Curled</th>
<th>Erose (Serrated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td></td>
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</tr>
<tr>
<td>Diagram</td>
<td><img src="image1" alt="Entire" /></td>
<td><img src="image2" alt="Curled" /></td>
<td><img src="image3" alt="Undulate" /></td>
<td><img src="image4" alt="Lobate" /></td>
<td><img src="image5" alt="Filamentous" /></td>
<td><img src="image6" alt="Curled" /></td>
<td><img src="image7" alt="Erose (Serrated)" /></td>
</tr>
</tbody>
</table>
Undulate
Lobate
Curled
Filamentous
Errose
Colonies can vary in their elevations both between microorganisms and growth conditions, and within individual colonies themselves.
Flat vs Raised
Convex
Pulvinate
Umbonate
Raised Margins

Streptococcus pneumoniae (blood agar)
Extreme Example of Crateriform
Colony Texture

Possible textures include:
- shiny to dull
- smooth to wrinkled
- rough
- granular
- mucoid

A shiny, smooth, and/or mucoid appearance tends to be associated with the presence of capsular material.
Rough

Bacillus cereus (blood agar)
Dull / Granular
Smooth
Mucoid
Wrinkled (Red colonies only)
Colony Light Transmission

The light transmission through colonies can range from:
- complete (transparent)
- through intermediate (translucent)
- through completely lacking (opaque)
Colony morphology of aerobic isolates
Colony Pigmentation

Colonies can come in a rainbow of colors.
Bacillus subtilis

- Colony shape and size: irregular, large

- Margin: undulate (wavy)

- Elevation: umbonate

- Color: white, dull

- Texture: dry (or rough)
Enterobacter aerogenes

- Colony shape and size: round and small
- Margin: entire
- Elevation: convex
- Color: yellow/Tan
- Texture: shiny
**Klebsiella pneumoniae**

- Colony shape and size: round and large
- Margin: undulate
- Elevation: unbonate
- Color: white translucent
- Texture: muciod
Serratia marcescens

- Colony shape and size: small and round
- Margin: entire
- Elevation: umbonate
- Color: red and white
- Texture: Mucoid
Bacillus subtilis

- Colony shape and size: irregular, large
- Margin: undulate (wavy)
- Elevation: umbonate
- Color: white, dull
- Texture: dry (or rough)
Bacillus megaterium

- **Colony shape and size:** large and irregular
- **Margin:** unbonate
- **Elevation:** convex
- **Color:** white
- **Texture:** dull
Enterobacter aerogenes

- Colony shape and size: small and round
- Margin: entire
- Elevation: convex
- Color: yellow/Tan
- Texture: shiny
Enterobacter aerogenes

- Colony shape and size: small and round
- Margin: entire
- Elevation: convex
- Color: yellow/Tan
- Texture: shiny
Escherichia coli

- Colony shape and size: Round and small
- Margin: entire
- Elevation: slightly raised
- Color: cream
- Texture: mucoid
**Lactobacillus acidophilus**

- Colony shape and size: round and punctiform
- Margin: smooth
- Elevation: convex
- Color: white
- Texture: smooth
Micrococcus luteus

- gram positive
- tetracoccus
**Micrococcus luteus**

- Colony shape and size: circular, pinhead
- Margin (edge): entire
- Elevation: Convex
- Color: yellow, non-diffusible pigment
- Texture:
Mycobacterium smegmatis

- Colony shape and size: irregular and small
- Margin: lobate
- Elevation: flat
- Color: orange-yellow, waxy
- Texture: dry
Proteus vulgaris

- Colony shape and size: Small and round
- Margin: entire
- Elevation: convex
- Color: tan
- Texture: mucoid

Note: This plate illustrates the typical "swarming" characteristic of the Proteus genus. Notice how the colony has moved out in "waves" across the plate.
Pseudomonas aeruginosa

- Colony shape and size: oval and medium
- Margin: wavy
- Elevation: umbonate
- Color: diffusible green
- Texture: mucoid
- Fruity odor
**Rhodospirillum rubrum**

- **Colony shape and size:** Pinpoint circular
- **Margin:** entire
- **Elevation:** convex
- **Color:** red pigment
- **Texture:** shiny
Staphylococcus aureus

- Colony shape and size: circular, pinhead
- Margin: entire
- Elevation: convex
- Color: golden-brown
- Texture: smooth
**Staphylococcus aureus**

- **Colony shape and size**: circular, pinhead
- **Margin**: entire
- **Elevation**: convex
- **Color**: golden-brown
- **Texture**: smooth
Staphylococcus epidermidis

- Colony shape and size: circular, pinhead
- Margin: entire
- Elevation: convex
- Color: agar or whitish
- Texture: mucoid
Vibrio anguillarum
Vibrio anguillarum

**Colony shape and size:** large and irregular

**Margin (edge):** entire

**Elevation:** convex

**Color:** Tan

**Texture:** Mucoid