

Training Set

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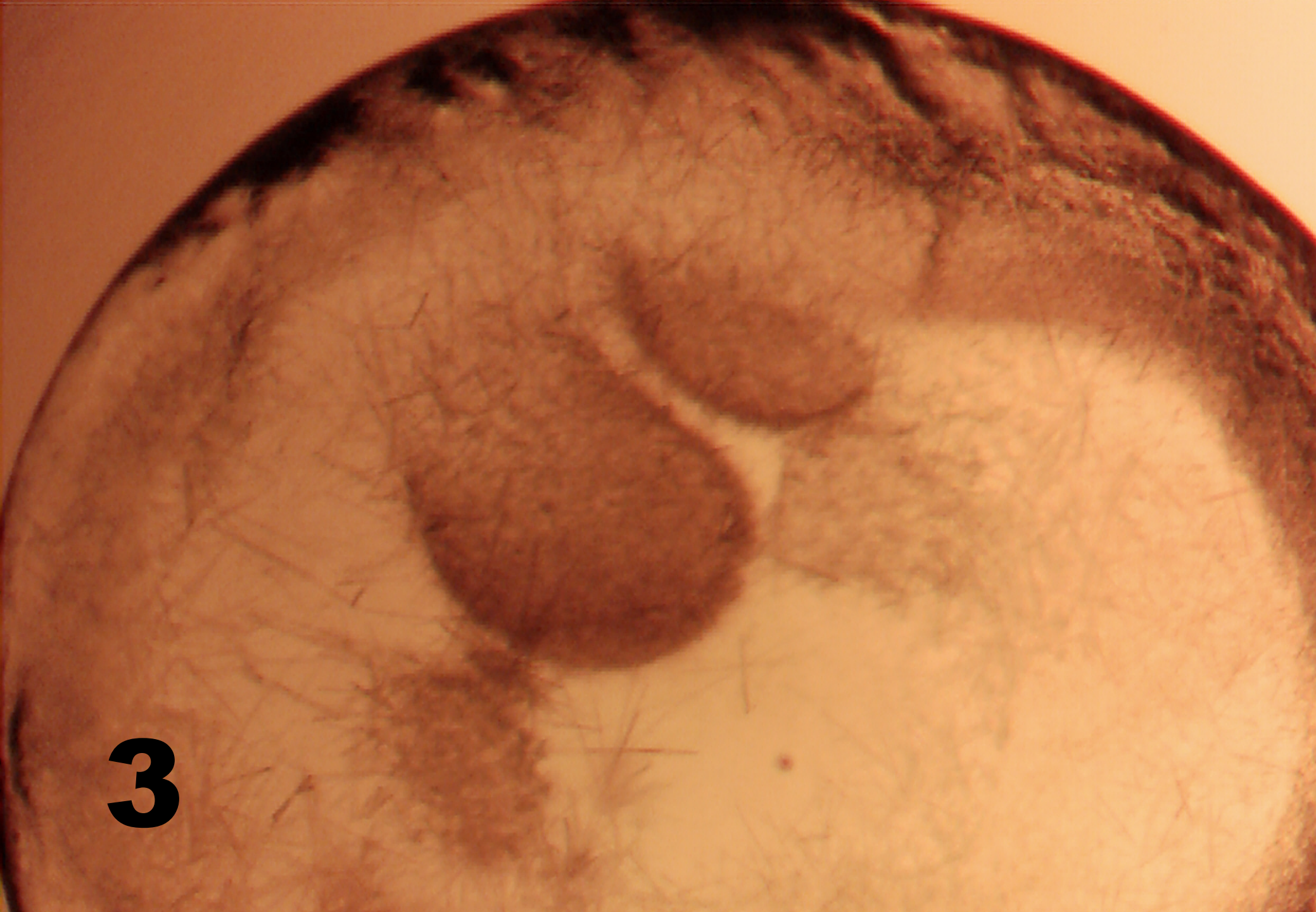
Here is a training set of ten pictures. Answers follow.



1



2

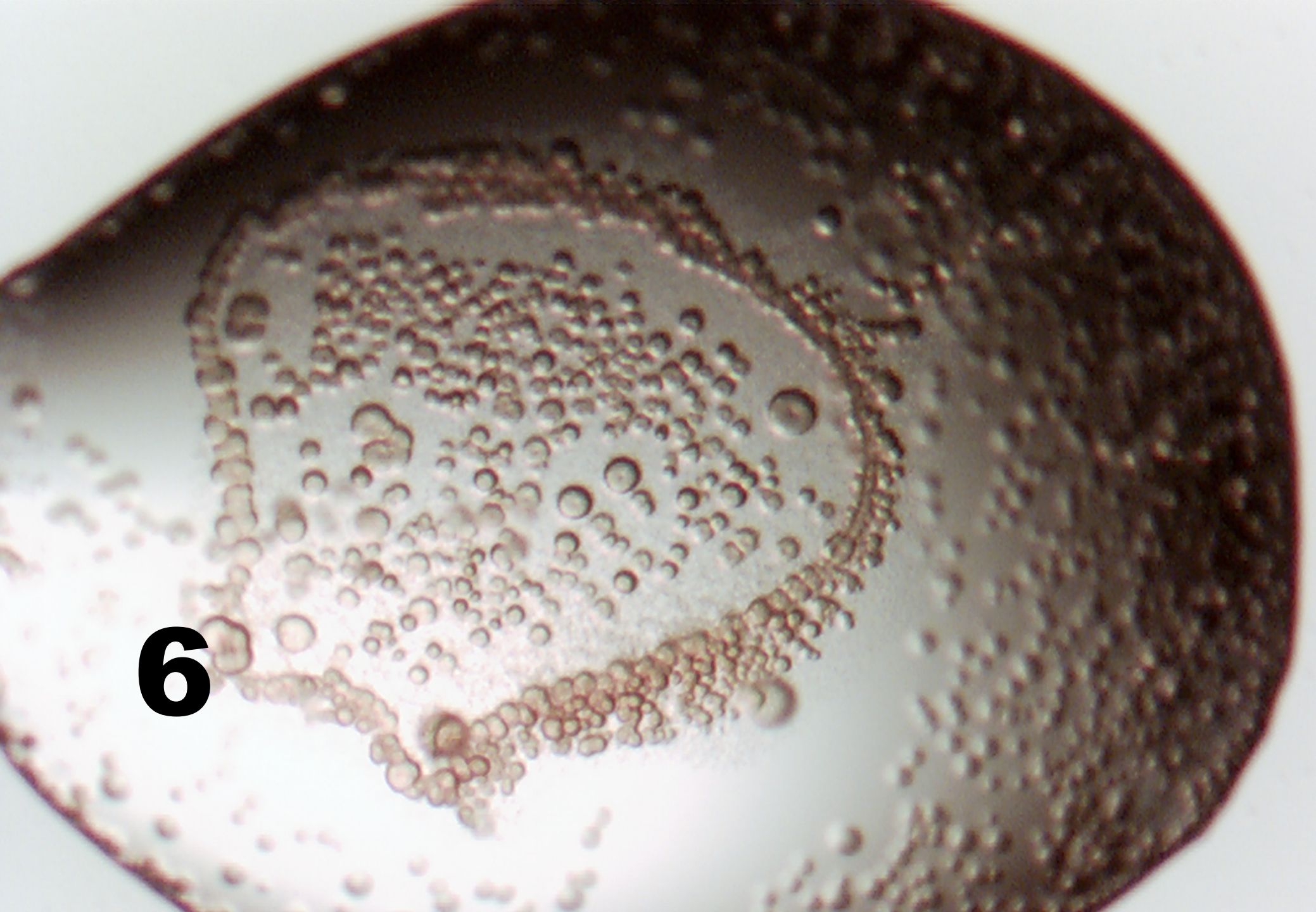


3

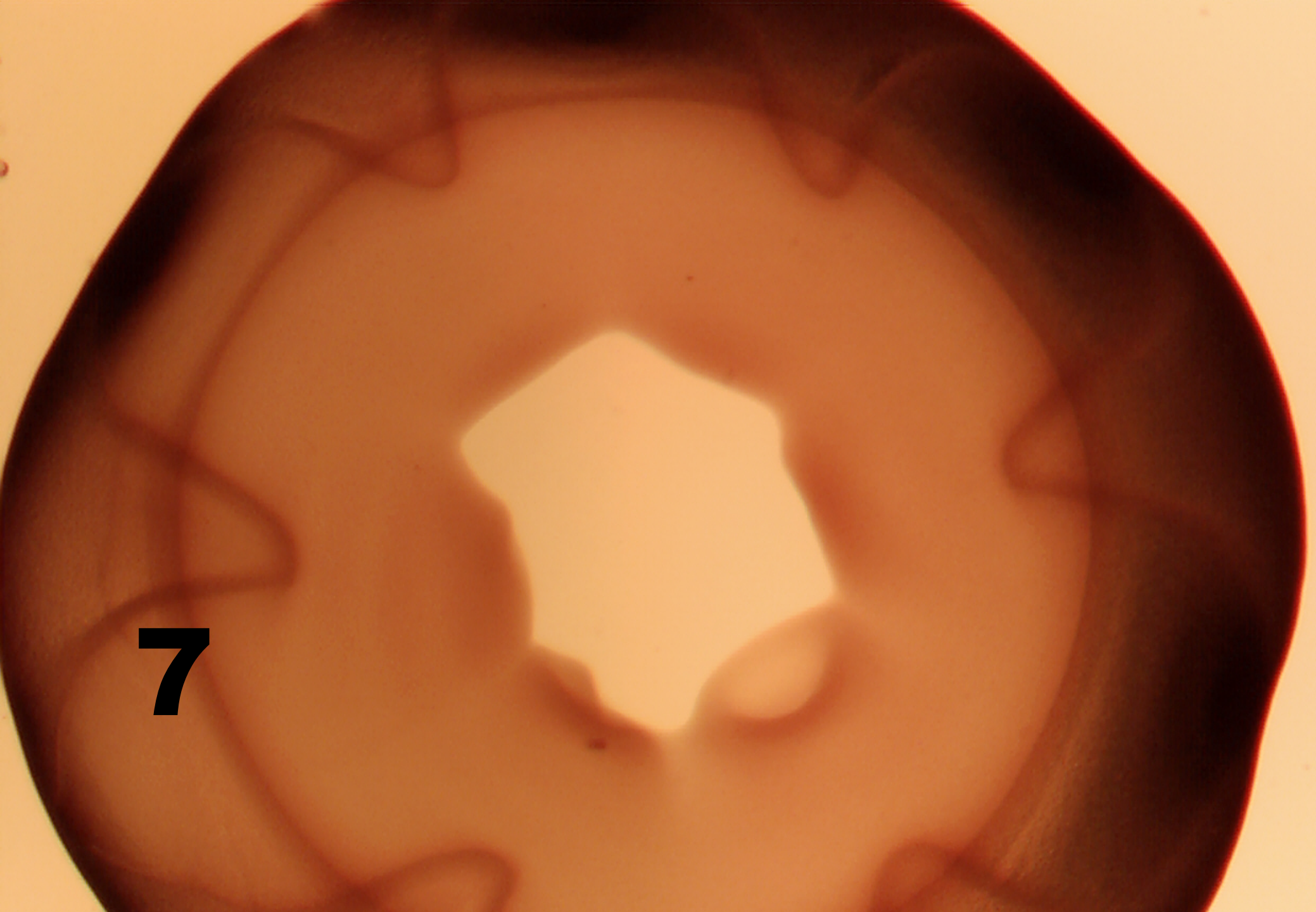


4

5



6

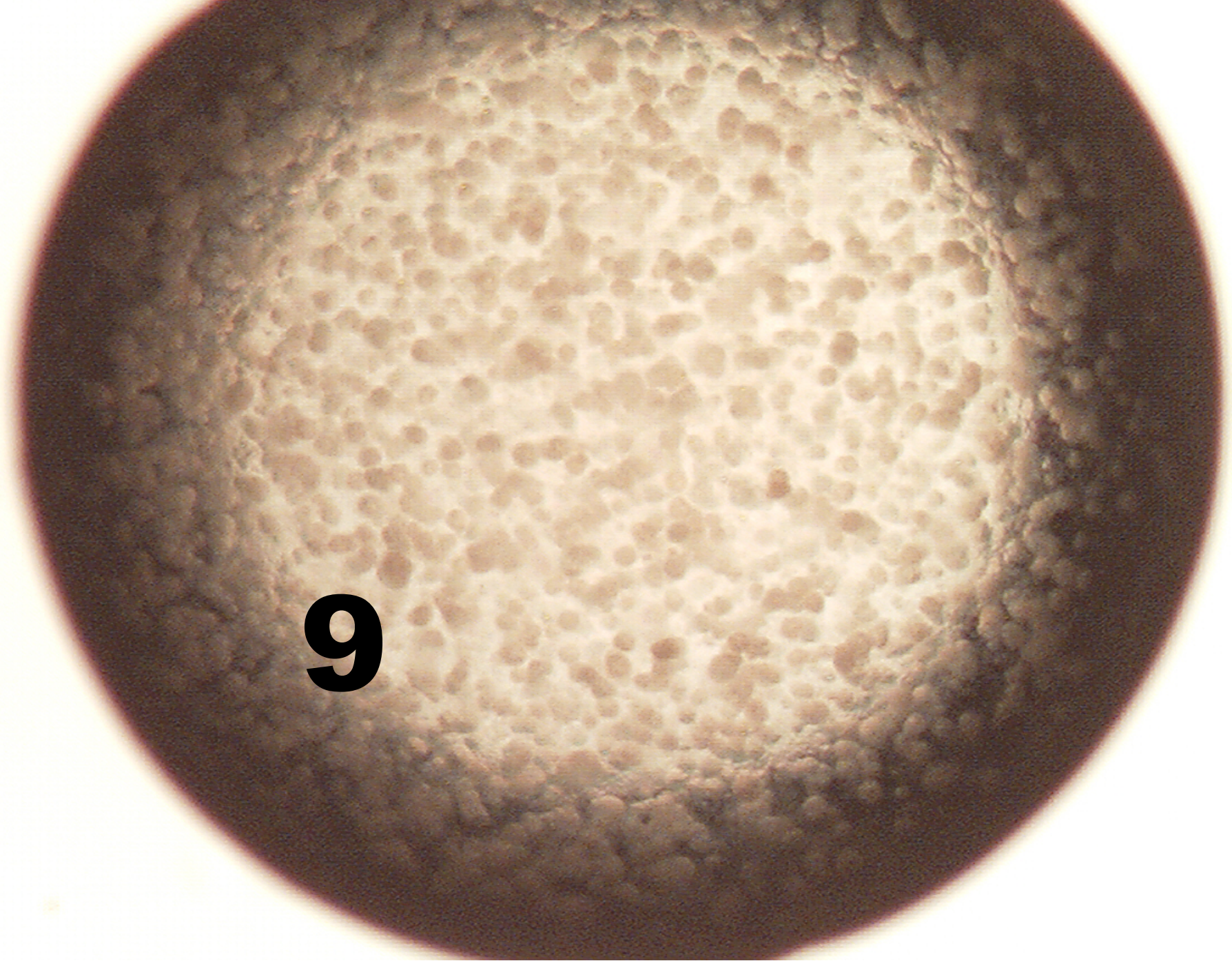


7

salt or protein?

8

A grayscale micrograph showing several elongated, rod-shaped structures. One structure on the right is significantly larger and more prominent than the others. The structures appear to be arranged in a somewhat organized pattern, possibly representing a biological sample like bacteria or spores. The background is dark, making the lighter structures stand out.



9

10



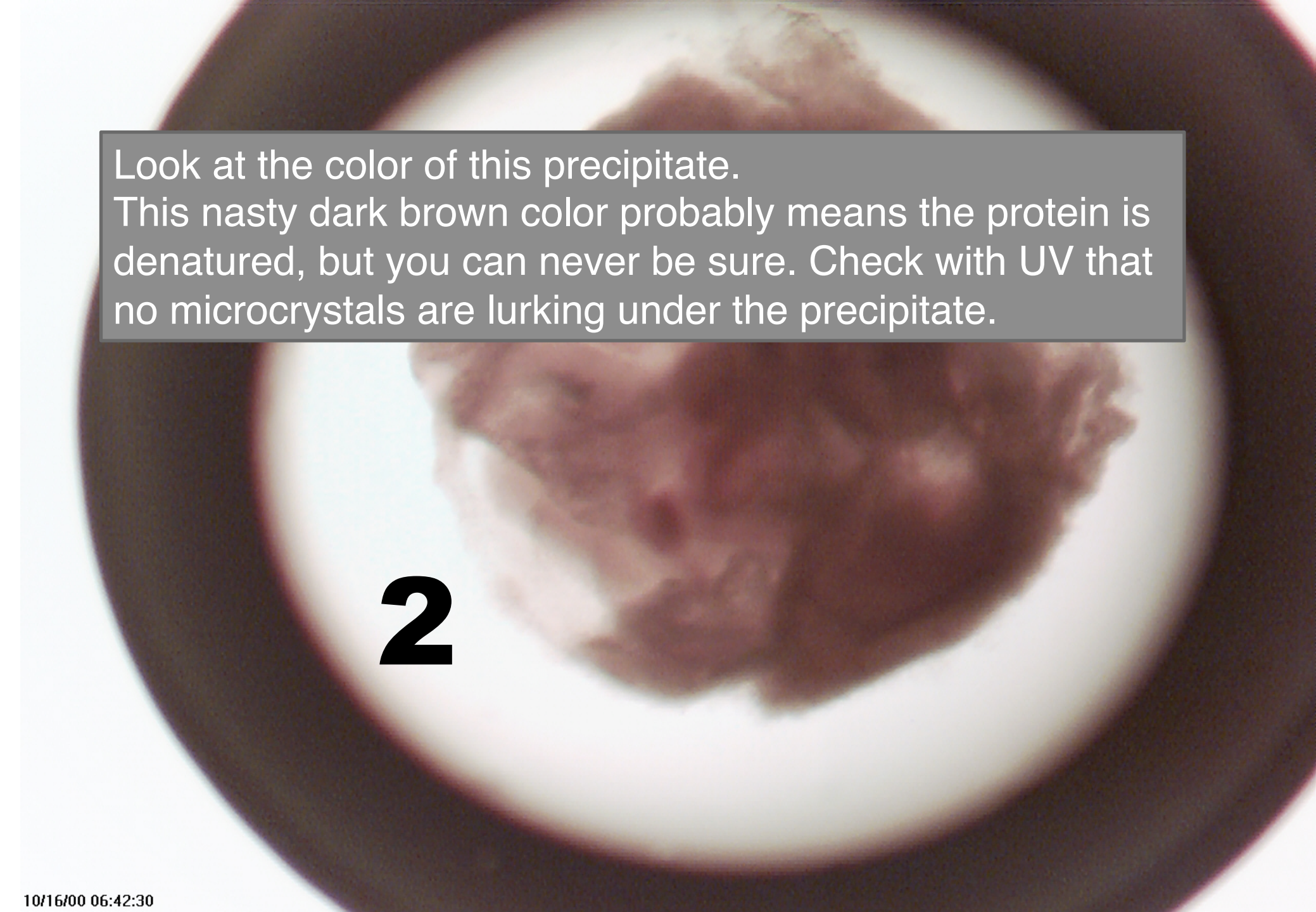
Answers

A microscopic view of a precipitate, showing a dense, granular, whitish substance. The precipitate is centered in the lower half of the frame, with a dark, circular boundary visible around it. The background is a dark, textured surface.

Precipitate, promising

Look at the color of this precipitate.
It is whitish, which is a good sign.

1

A circular field of view, likely from a microscope, showing a dark brown, irregularly shaped precipitate. The precipitate is centered and occupies most of the field. The background is a light, slightly hazy color. A semi-transparent grey box with white text is overlaid on the top left of the image.

Look at the color of this precipitate.
This nasty dark brown color probably means the protein is denatured, but you can never be sure. Check with UV that no microcrystals are lurking under the precipitate.

2

A microscopic image showing a biological specimen, likely a cross-section of a plant stem or a similar structure. The central part is a lighter, circular area, possibly a vascular bundle or a central cavity. The surrounding tissue is darker and shows a complex, fibrous or cellular structure with radial patterns. The overall color is a mix of brown and tan.

3

Needles. The drop is also drying out at the edges.

The drop is drying out at the edges. Amorphous precipitate.

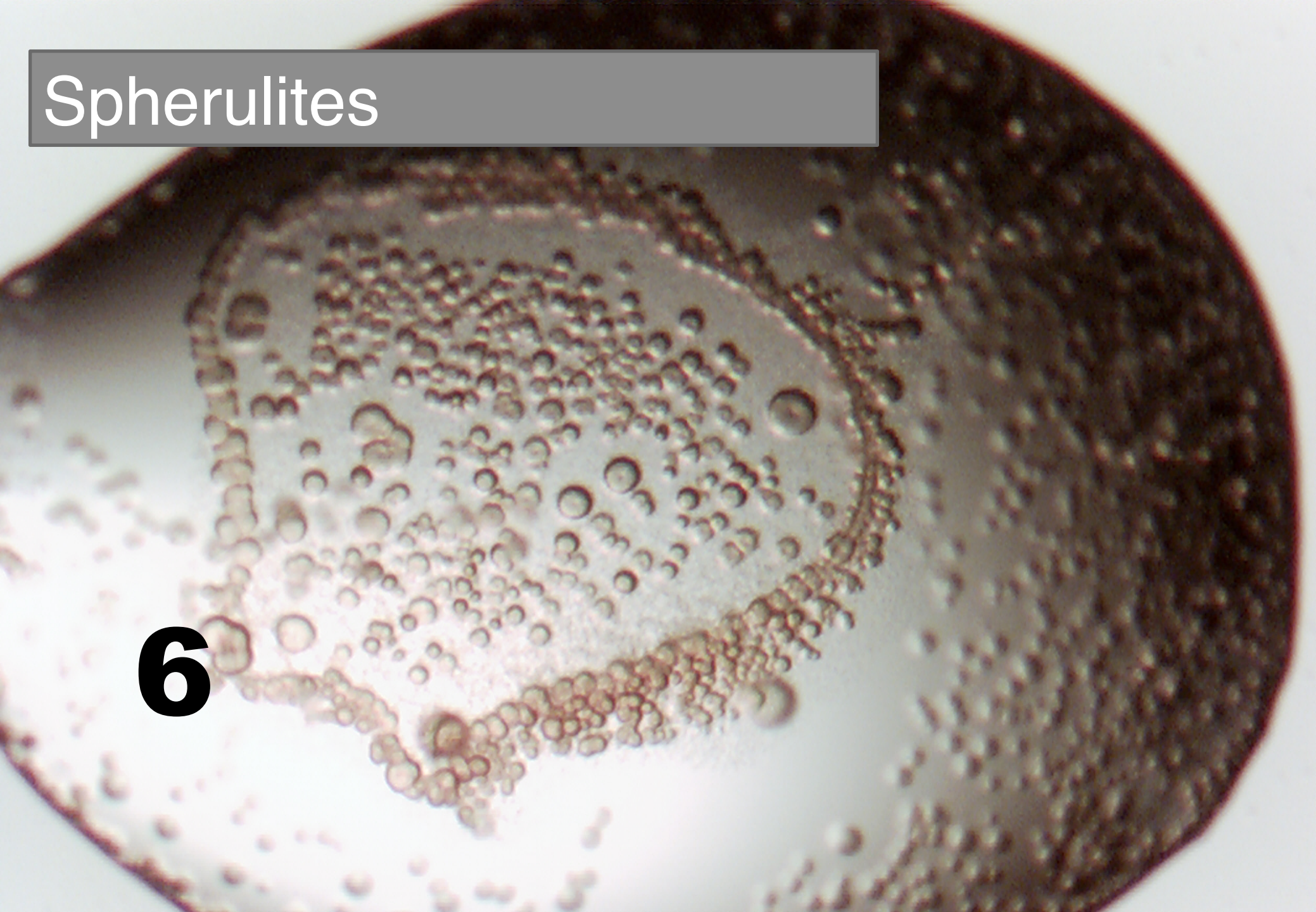
4

Phase
separation.

5

Spherulites

6



Poor mixing of protein and precipitant gives rise to this appearance.

7





salt or protein?

8

It's salt. The protein has precipitated ON the salt crystals.

Phase separation in which the protein has precipitated in one of the phases.

9



10

No, it's not an airplane. It is one of Janet's crystals that diffracted to 3\AA . Moral of the story: put it in the beam no matter what it looks like.

more pictures at
<http://xray.bmc.uu.se/terese>



Also, take a look at Janet's program
Cinder Kinder

<https://research.csiro.au/crystal/user-guide/c3-cinder/>

It has 200 images for training. The images are scored as: clear, precipitate, other, or crystal.