

Transmission Electron Microscope (EM)

Re: visualization of flagella

OPERATION

- resolve structures down to 0.2 nm
- magnify images up to 200,000 times
- a magnetic field focuses the electrons as they travel down column
- must be a vacuum to prevent deflection of beam by air molecules

STAIN-negative stain

- metal grid with a thin plastic coating is used
- a drop of saline suspended *E. coli* is put on the grid
- any particles (bacteria) will adhere to the grid
- drop of heavy metal solution is added, the metal particles will settle around anything on the grid
- as the electron beam shines through the sample, the electron will bounce off the metal (or denser areas of bacteria) and appear dark on viewing screen

Can you see unstained flagella using a light microscope?