NUCLEAR DIVISION

Characters and Character States

Division type:
ME, meiosis;
MI, mitosis

1. Centriole
  0, absent;
  1, present

2. Basic organization of the spindle pole
  0, centriolar-associated material;
  1, spindle pole body consists of small amount of extranuclear material
    (Mucoralean zygomycetes);
  2, ring-like spindle pole body;
  3, spindle pole body a plaque or disc;
  4, spindle pole body globular;

3. Spindle pole body form, interphase-prophase:
  0, quadrilateral plaque;
  1, unlayered disc;
  2, a 2-layered disc;
  3, a 3-layered disc;
  4, a 7- to 9-layered disc;
  5, a globoid;
  6, a subgloboid with flat internalized layer (Microbotryum);
  7, a subgloboid with internalized layer convex with respect to the spindle
    (Tilletia/USTilago);
  8, notched ring with middle piece and intranuclear component (Erynia);
  9, ring containing microtubules but lacking centriolar 9-fold symmetry
    (Basidiobolus);
  a, slight amount of extranuclear and intranuclear material on either side of
    nuclear envelope (Mucoralean zygomycetes);
  b, centriolar-associated extranuclear and intranuclear components with intact
    nuclear envelope (Catenaria, Blastocladiella);
  c, centriole-associated material (Polyphagus)
4. **Spindle pole body form, metaphase-anaphase:**

   0. quadrilateral plaque with intact nuclear envelope and internal microtubule organizing center;
   1. unlayered disc with intact nuclear envelope and internal microtubule organizing center;
   2. a 2-layered disc with intact nuclear envelope and internal microtubule organizing center;
   3. a 4-layered disc directly connected to spindle;
   4. a 5-layered disc directly connected to spindle;
   5. a 7- to 9-layered disc directly connected to spindle;
   6. an ellipsoid that expands by more than 100% of its interphase-prophase size directly connected to spindle (*Auricularia*);
   7. a globoid that expands by more than 100% of its interphase-prophase size directly connected to spindle;
   8. a globoid with limited enlargement directly connected to spindle;
   9. a subgloboid with flat internalized layer directly connected to spindle (*Microbotryum*)

   a. a subgloboid with internalized layer convex with respect to the spindle and directly connected to spindle (*Tilletia/Ustilago*);
   b. notched ring with persistent half middle piece and clear zone between intranuclear component and nuclear envelope;
   c. ring containing microtubules but lacking centriolar 9-fold symmetry;
   d. slight amount of extranuclear and intranuclear material on either side of nuclear envelope (Mucoralean zygomycetes);
   e. centriolar-associated extranuclear and intranuclear components with intact nuclear envelope (*Catenaria, Blastocladiella*);
   f. centriole associated material (*Polyphagus*)

5. **Spindle development site:**

   0. gap in nuclear envelope;
   1. cytoplasm;
   2. intranuclear (nuclear envelope intact)


   0. migration before spindle formation;
   1. migration during spindle formation;
   2. formation of adjacent fan-shaped arrays of microtubules that reorient during spindle formation;
   3. integration of spindle pole body into invaginated nuclear envelope before spindle formation (*Taphrina polystichii*)

7. **Metaphase nuclear envelope:**

   0. intact;
   1. intact with small polar fenestrae plugged by the spindle pole bodies;
   2. loose polar fenestrae, including extensions of nuclear envelope into the cytoplasm at the spindle pole, but mainly intact;
   3. partially dispersed;
   4. nearly or entirely dispersed
8. **Telophase nuclear envelope:**
   0, retention of complete nuclear envelope around the chromatin with median constriction/fragmentation;
   1, retention of parts of a disrupted nuclear envelope around the chromatin;
   2, new envelope forms within old envelope;
   3, dispersed in interzone (*Basidiobolus*);
   4, reappearance of nuclear envelope after metaphase;
   5, retention of the nuclear envelope around the chromatin with constriction/fragmentation near the poles, and interzone is cut off from the daughter nuclei.

9. **Perinuclear endoplasmic reticulum:**
   0, absent;
   1, present.

10. **Spindle vesicles:**
    0, absent;
    1, present.

11. **Central spindle:**
    0, absent;
    1, present.

12. **Metaphase plate:**
    0, absent;
    1, present.

13. **Spindle pole body cap:**
    0, absent;
    1, continuous with the nuclear envelope;
    2, distinct from nuclear envelope;
    3, fragments of a discontinuous membrane that do not form a true cap.

14. **Interphase chromatin condensation:**
    0, absent;
    1, present.

15. **Nucleolus behavior:**
    0, nucleolus is dispersed and no longer recognizable during prophase;
    1, nucleolus discarded between prophase and metaphase;
    2, nucleolus or part of it is more persistent and is discarded after metaphase;
    3, nucleolus is persistent throughout division.

16. **Transient intranuclear element at late interphase-prophase:**
    0, absent;
    1, present within nucleus opposite the extranuclear spindle pole body.