

Argomenti di oggi

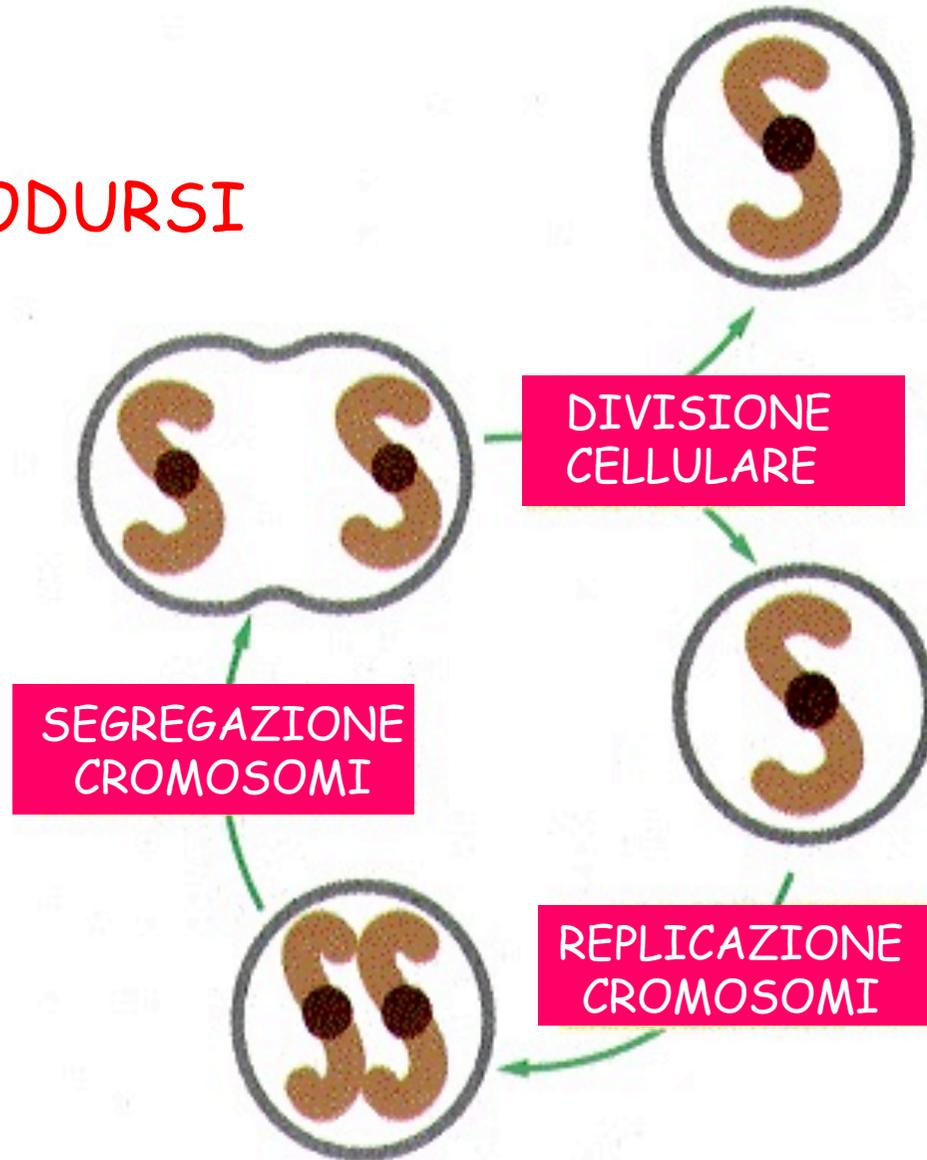
Ciclo cellulare e riproduzione cellulare: mitosi e meiosi.

Riproduzione ed Ereditarietà.

Cicli vitali. Riproduzione sessuata ed asessuata.

IL CICLO CELLULARE: DUPLICARE E RIPARTIRE IL CORREDO GENETICO

AUTO-RIPRODURSI



RISPETTO ALLA CAPACITÀ DI DIVIDERSI LE CELLULE POSSONO CLASSIFICARSI IN:

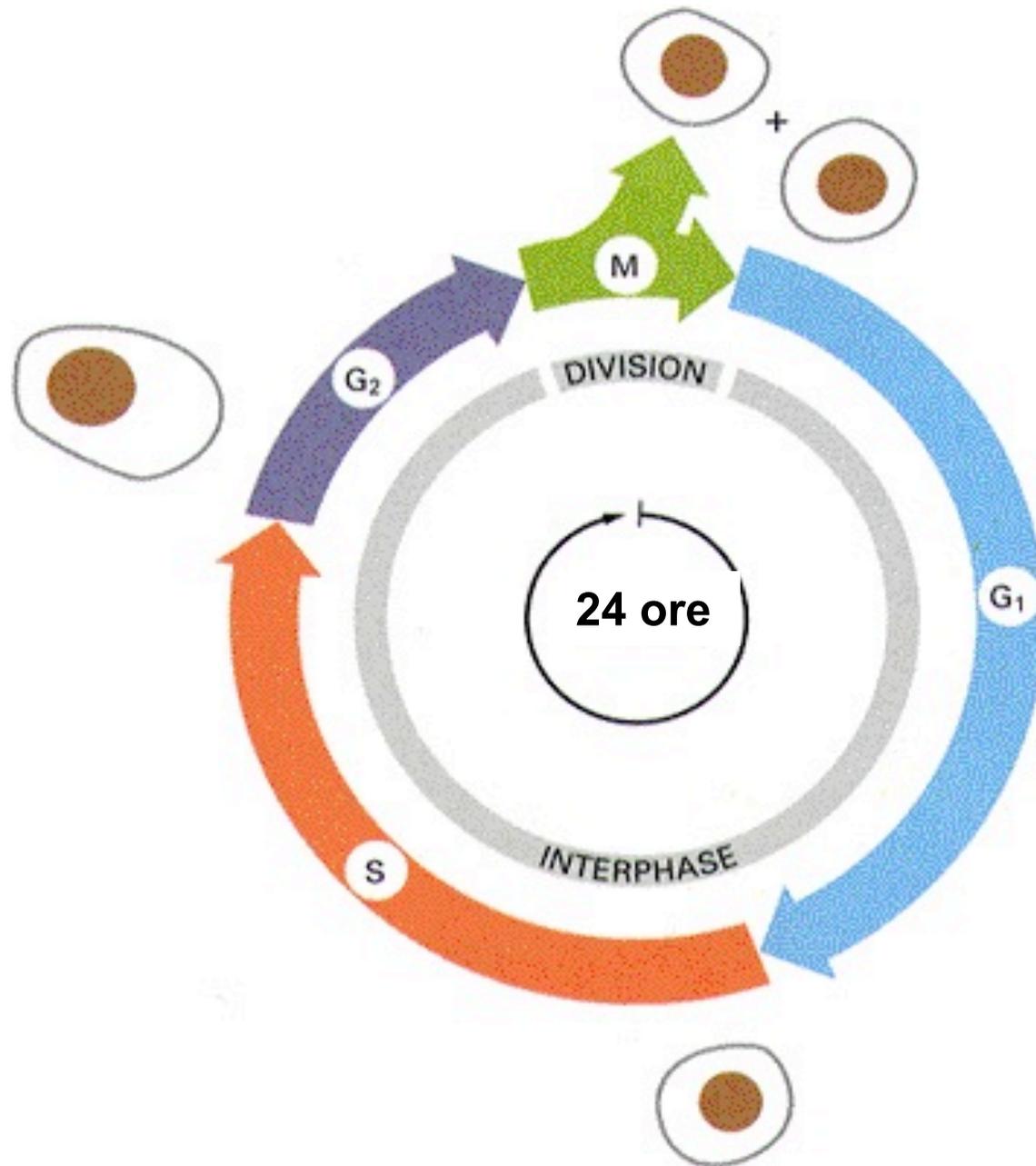
PERENNI: neuroni, cellule muscolari

LABILI: cellule staminali

STABILI: cellule epatiche

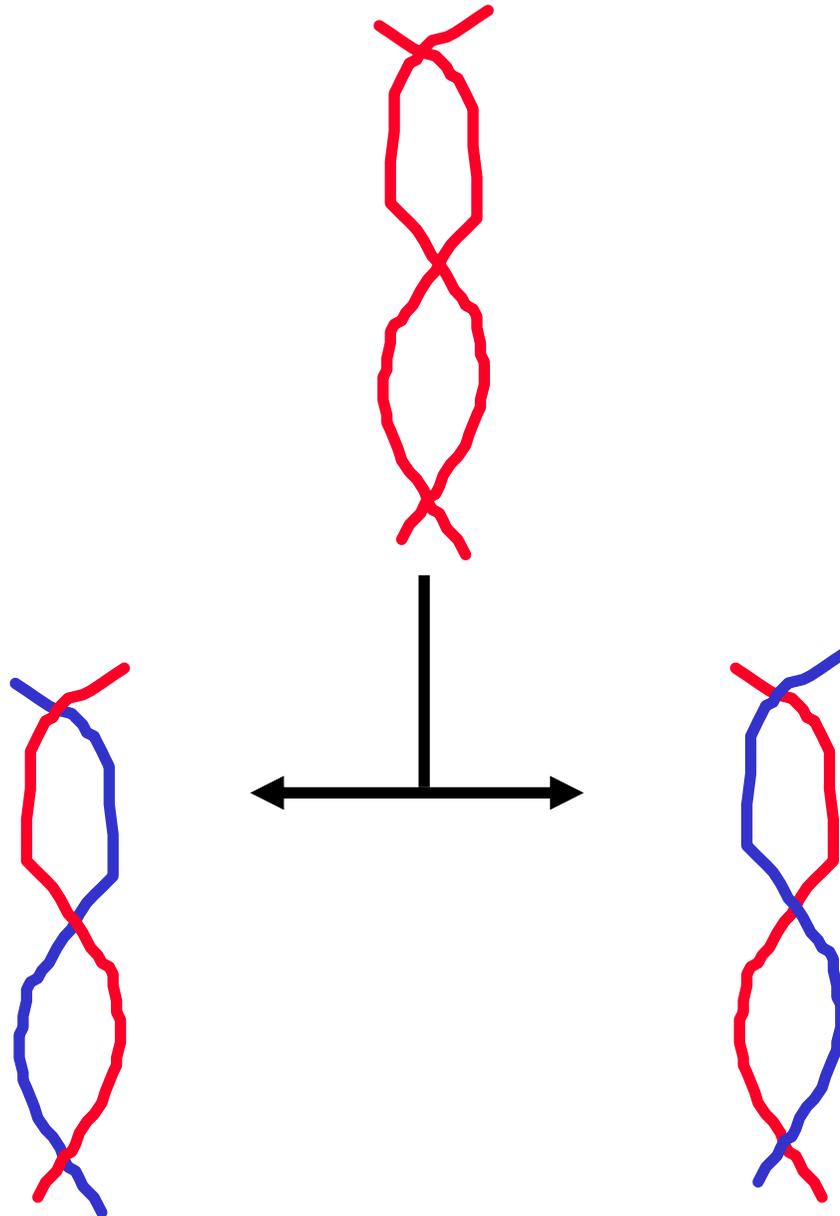
- ✓ Le cellule si dividono ciclicamente
- ✓ La divisione cellulare rappresenta una parte del ciclo di una cellula

IL CICLO CELLULARE SI SUDDIVIDE IN 4 FASI

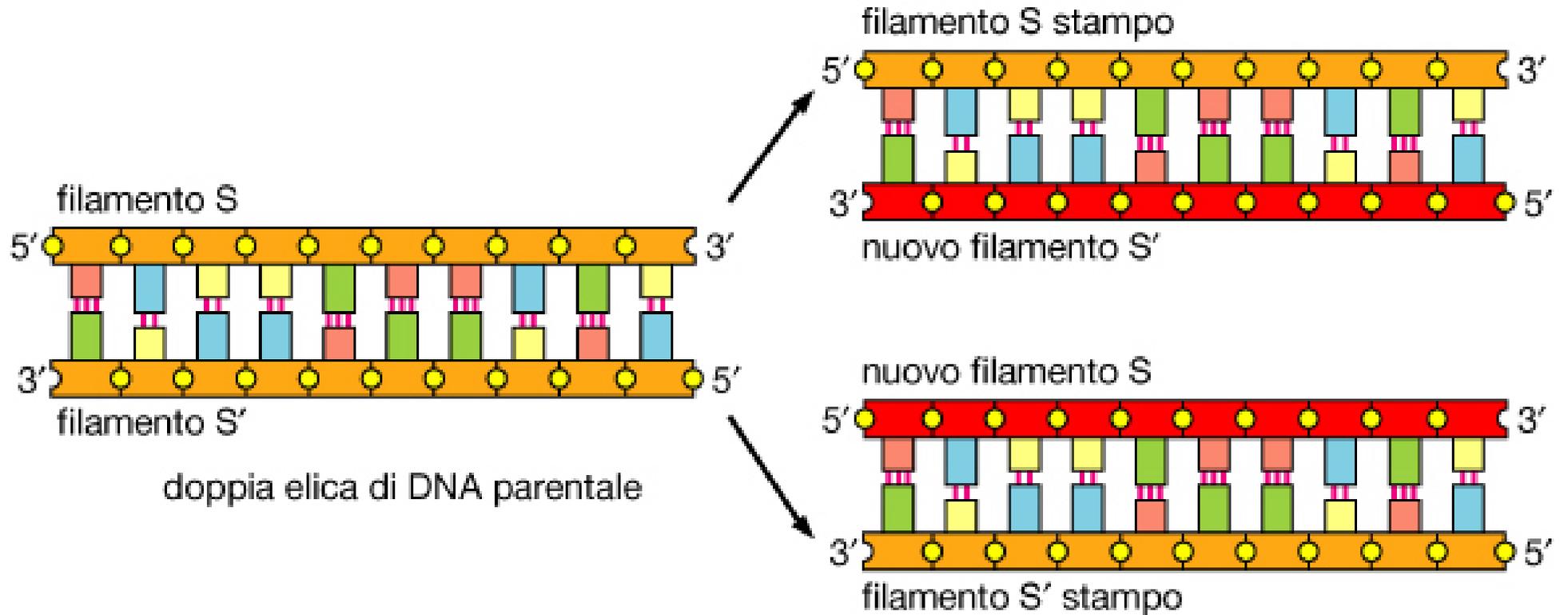


LA FASE S E' LA FASE IN CUI
AVVIENE LA SINTESI DEL DNA:
REPLICAZIONE O
DUPLICAZIONE DEL DNA

LA REPLICAZIONE DEL DNA E' SEMICONSERVATIVA



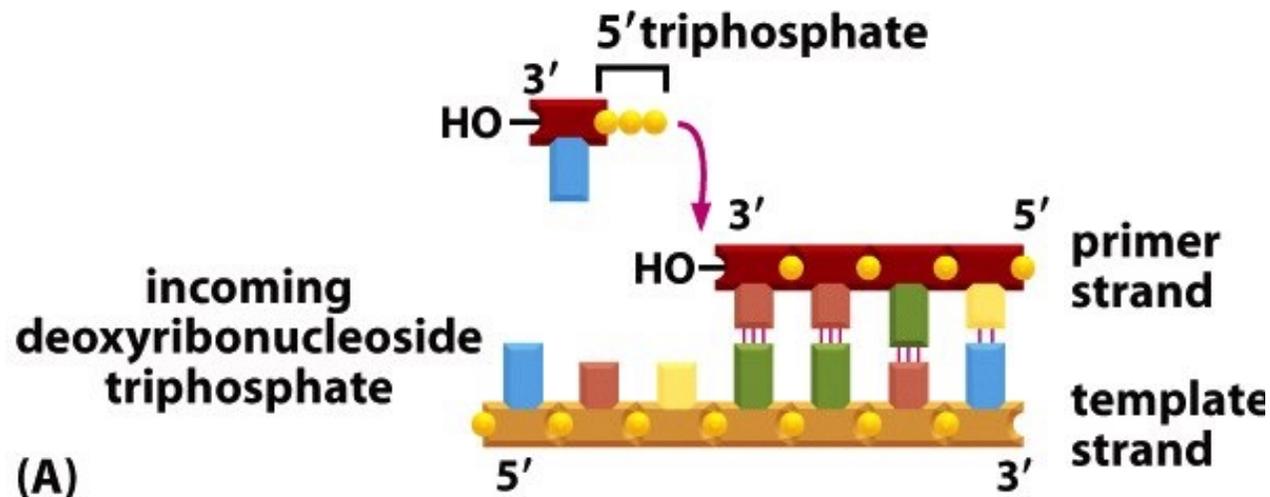
CIASCUN FILAMENTO FA DA STAMPO PER LA SINTESI DEL NUOVO FILAMENTO



IL MECCANISMO MOLECOLARE DI REPLICAZIONE DEL DNA

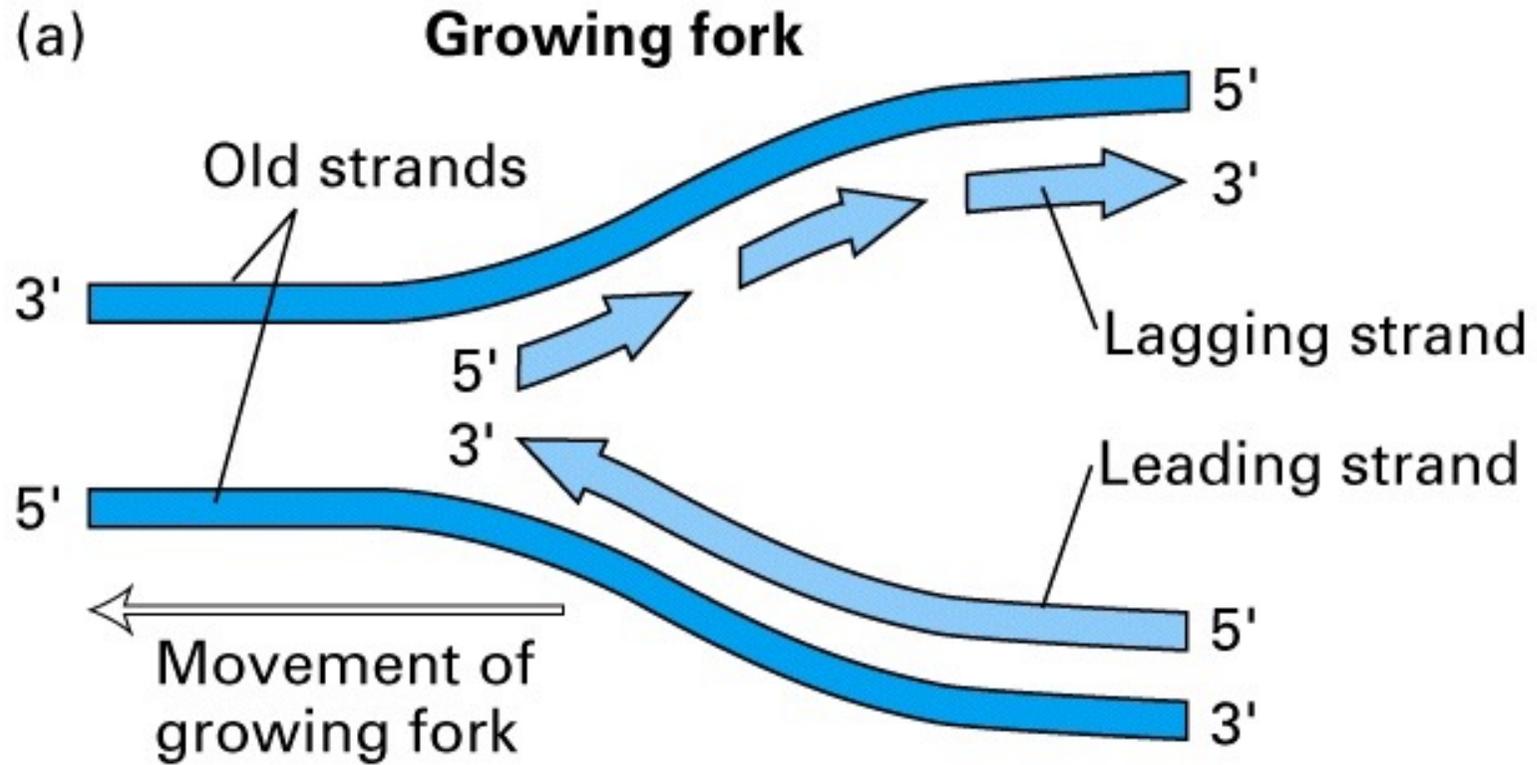
Le due eliche si separano e ciascuna funge da **stampo** per la sintesi di una nuova elica **complementare**

Ogni nuovo nucleotide viene legato al 3' -OH del nucleotide precedente

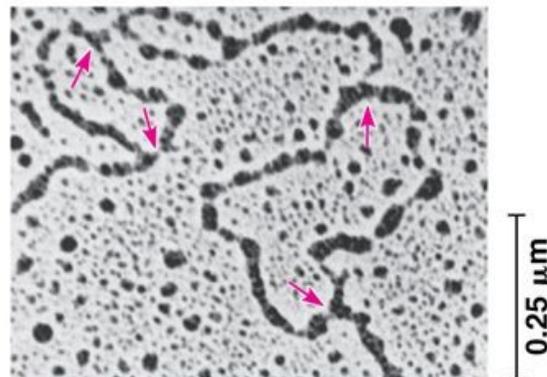
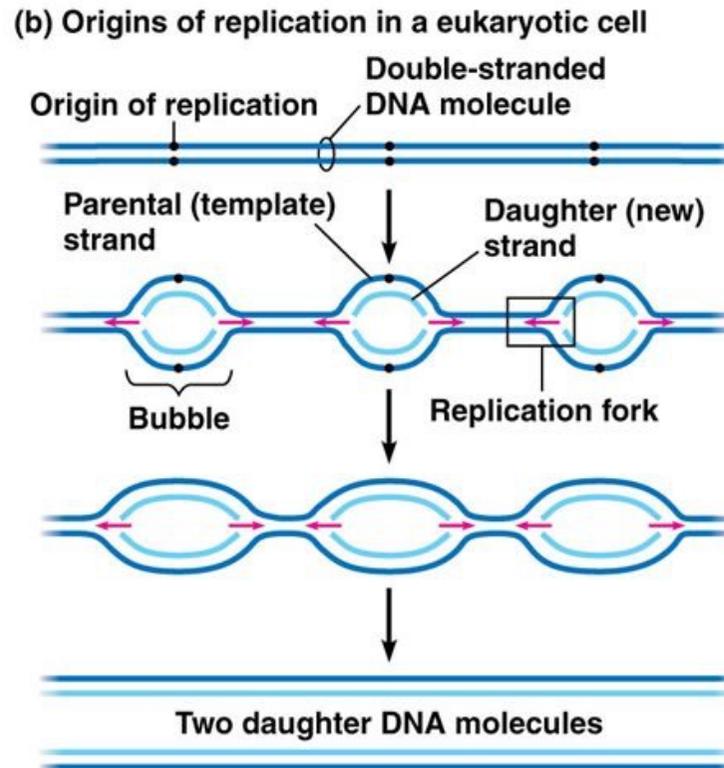


La direzione di sintesi complessiva è: 5' -3'

LA FORCA DI REPLICAZIONE È UNA STRUTTURA ASIMMETRICA



LA REPLICAZIONE INIZIA IN PIU' PUNTI CONTEMPORANEAMENTE



CIRCA UNA DOZZINA DI FATTORI SONO COINVOLTI NELLA REPLICAZIONE DEL DNA

ORC (ORIGIN REPLICATION COMPLEX)

ELICASI

SSB (SINGLE STRAND BINDING)

TOPOISOMERASI

DNA POLIMERASI α /PRIMASI

PCNA

RFC

DNA POLIMERASI δ

ESONUCLEASI

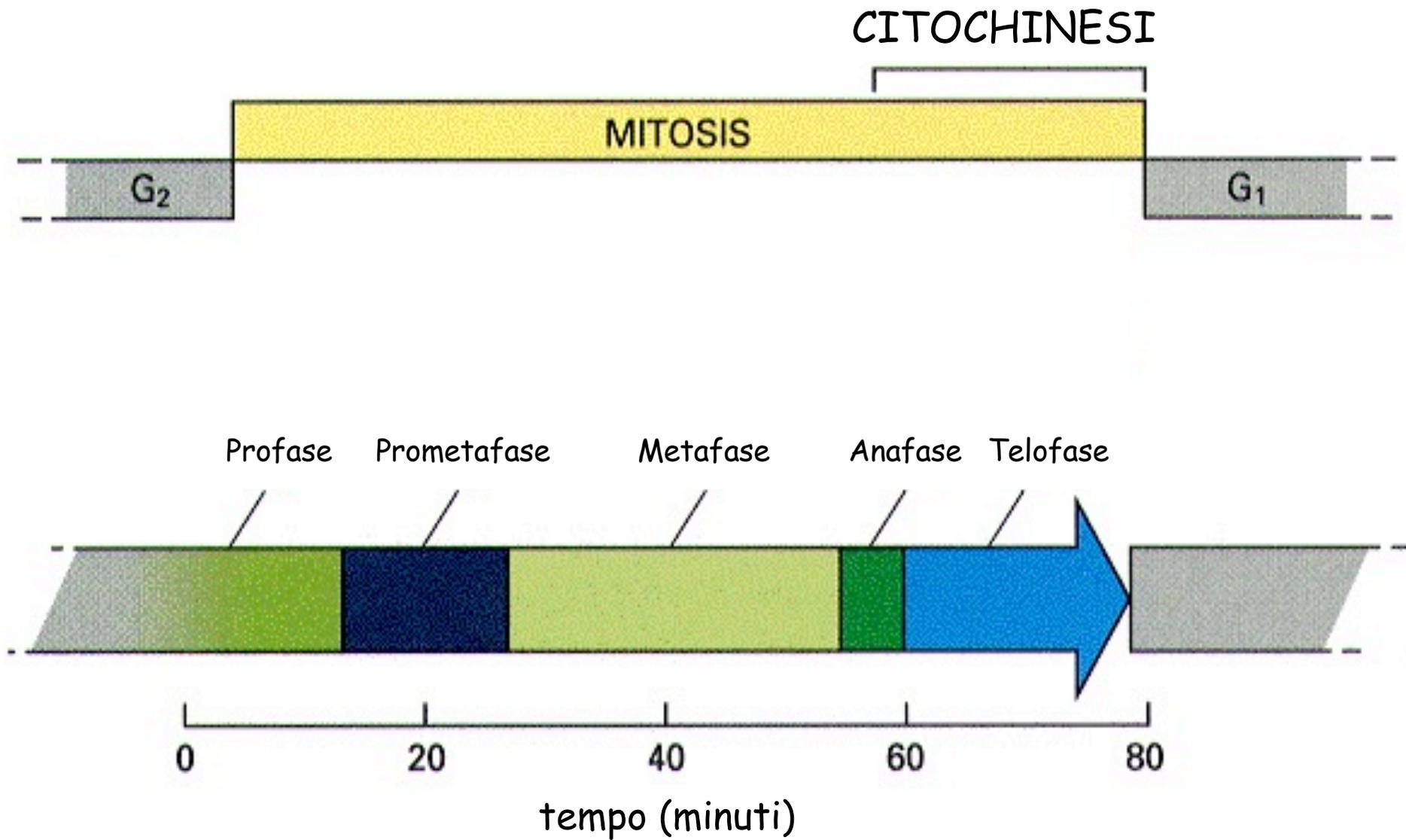
DNA POLIMERASI

LIGASI

TELOMERASI

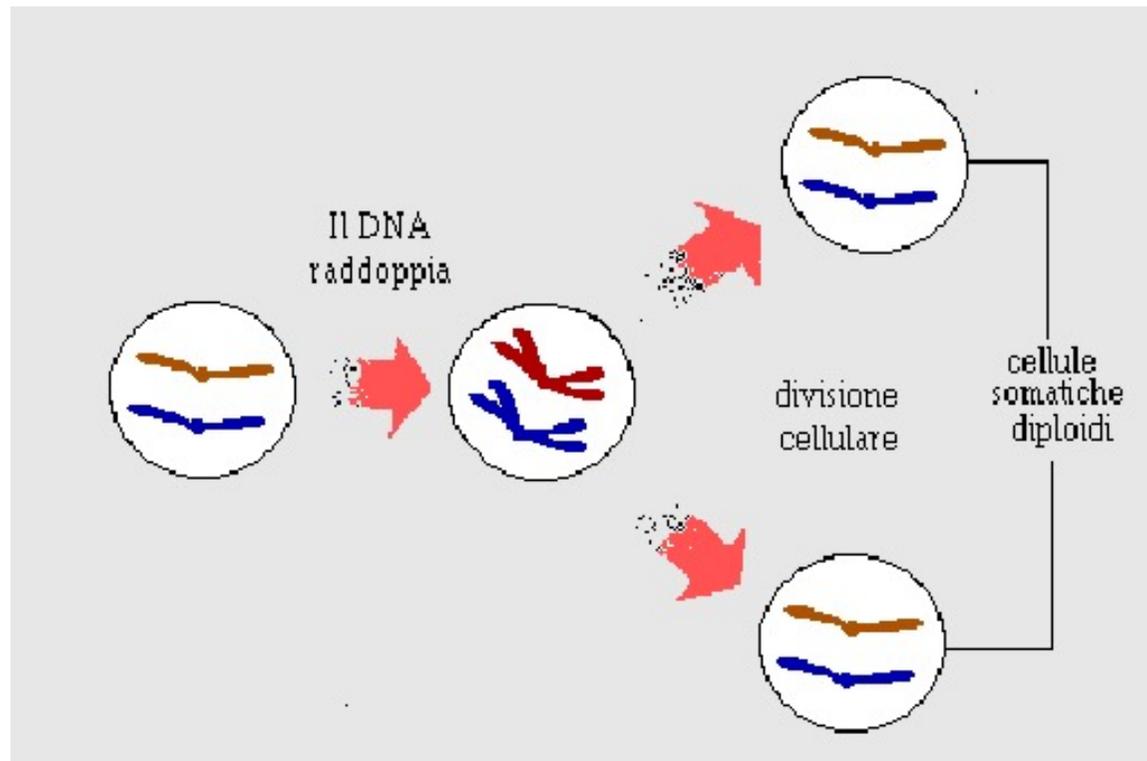
LA MITOSI E' UNA FASE
DEL CICLO CELLULARE

LA MITOSI E LE SUE FASI SI SVOLGONO IN TEMPI RELATIVAMENTE BREVI

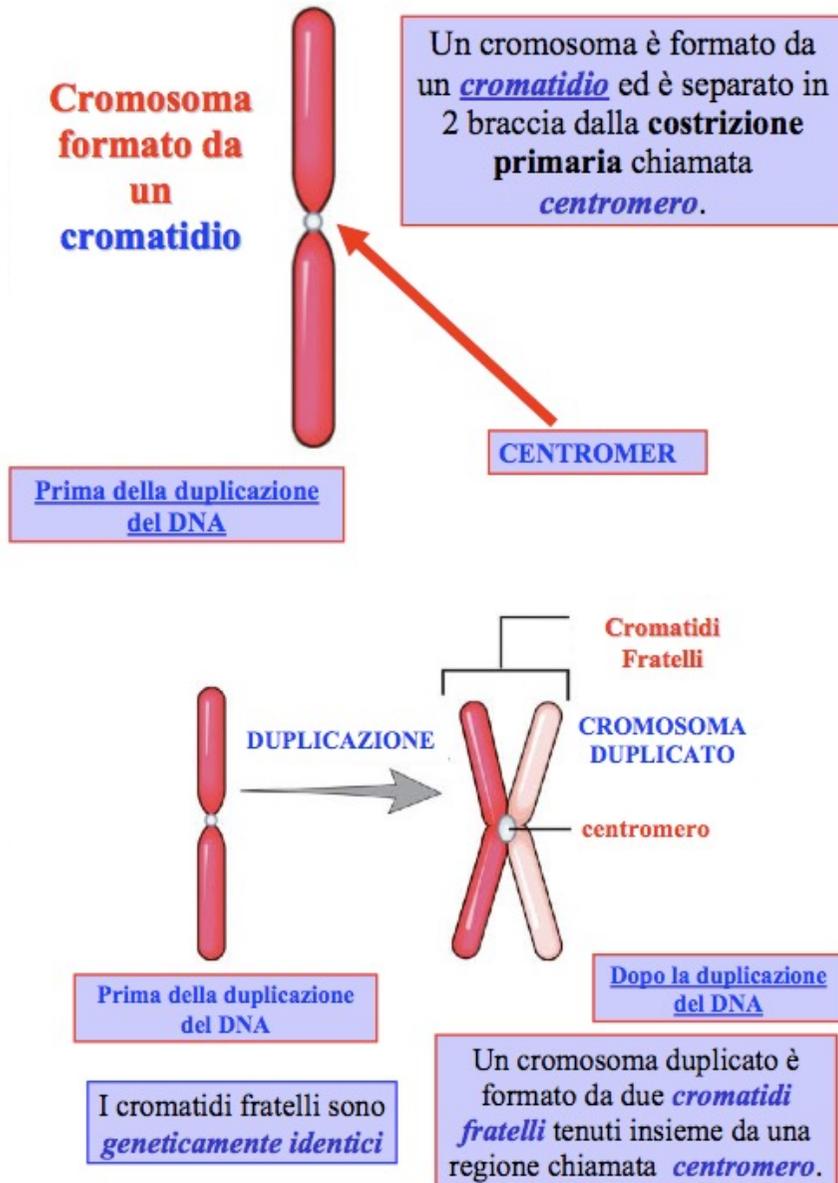


MITOSI

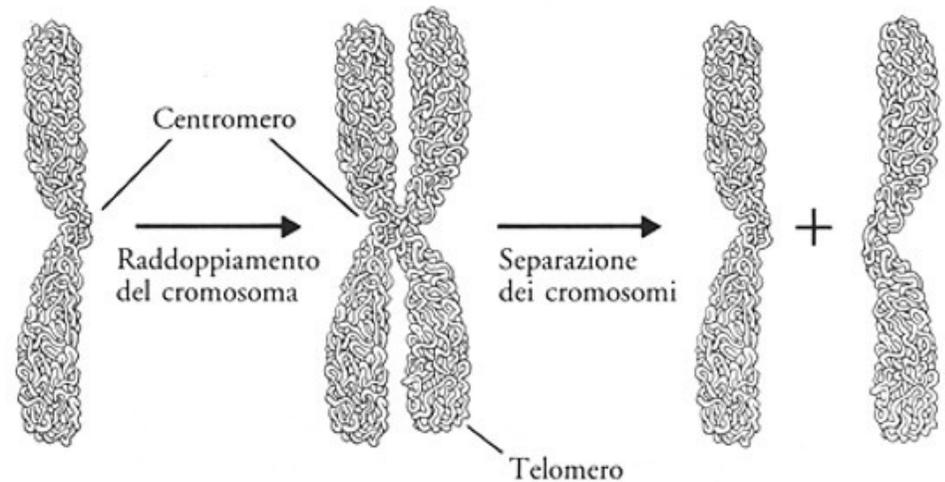
La mitosi è il processo di divisione cellulare che conduce alla genesi di **due cellule figlie** che hanno lo stesso patrimonio genetico della cellula di partenza.



DOPO LA DUPLICAZIONE DEL DNA CIASCUN CROMOSOMA E' COSTITUITO DA DUE CROMATIDI

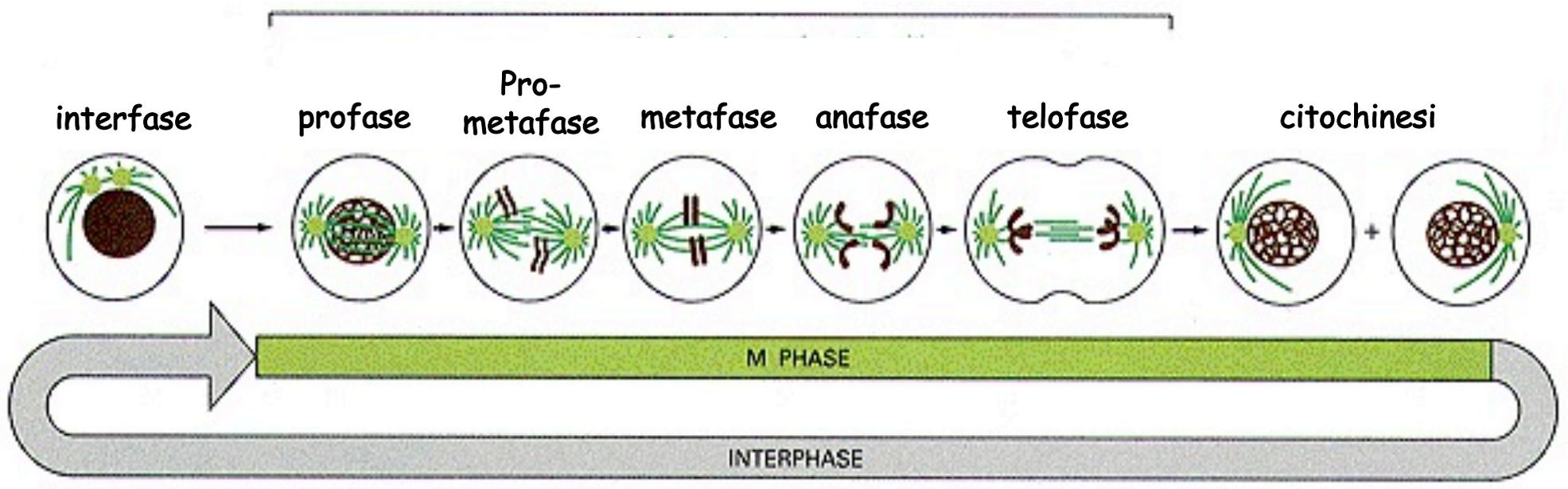


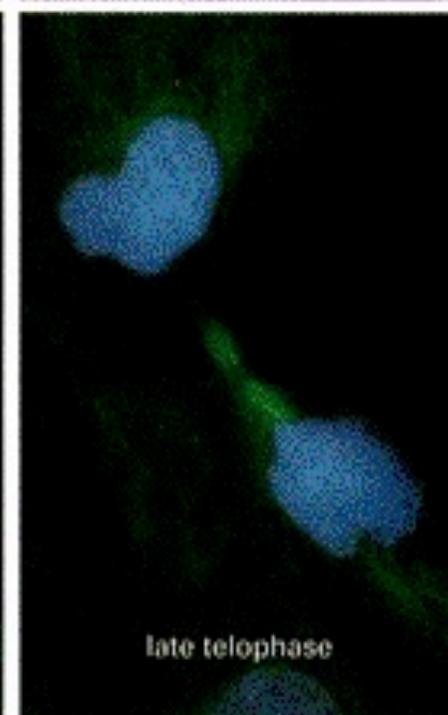
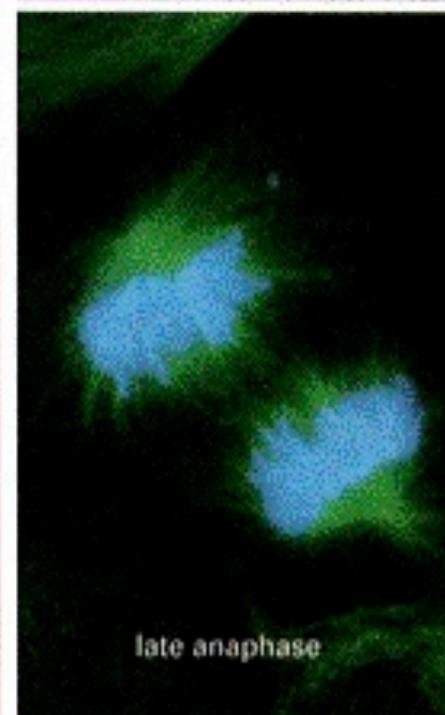
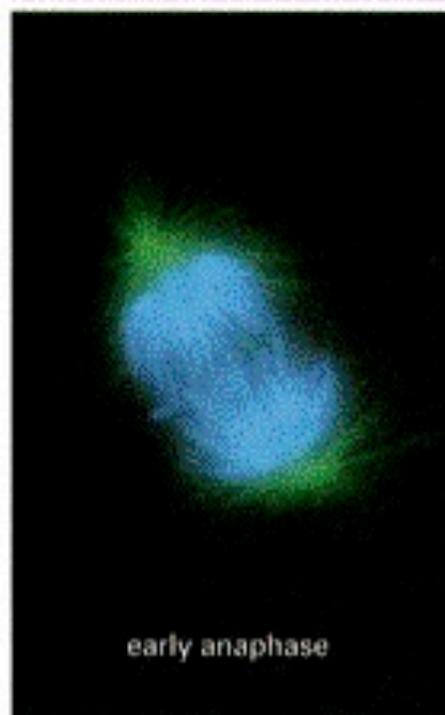
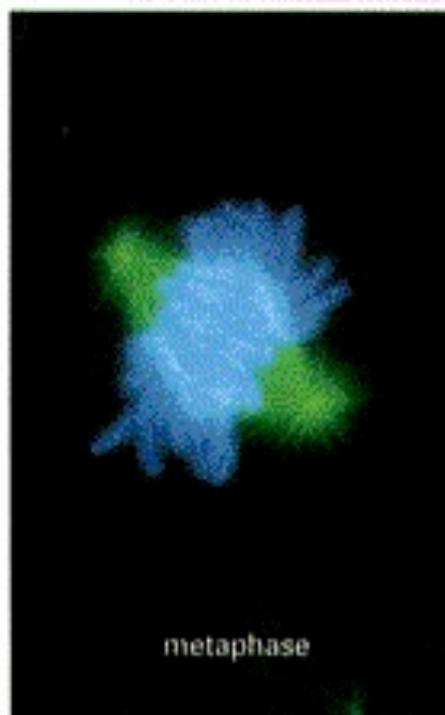
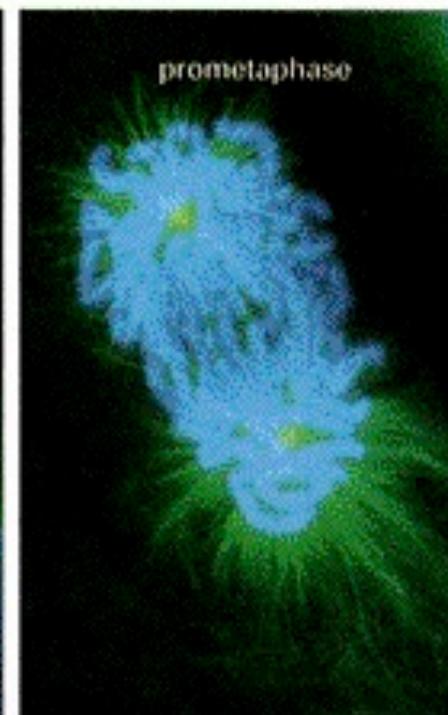
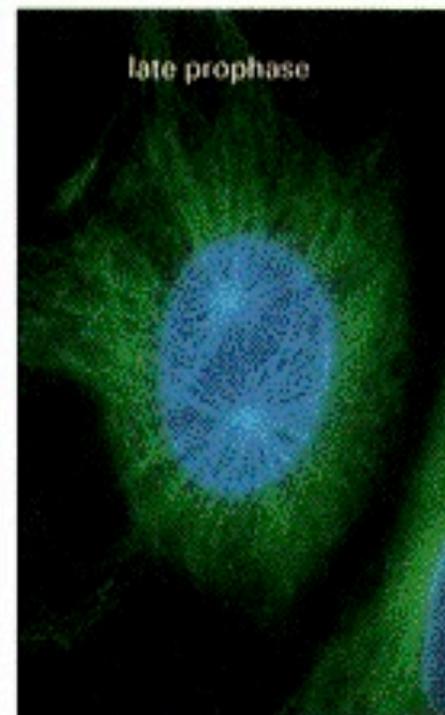
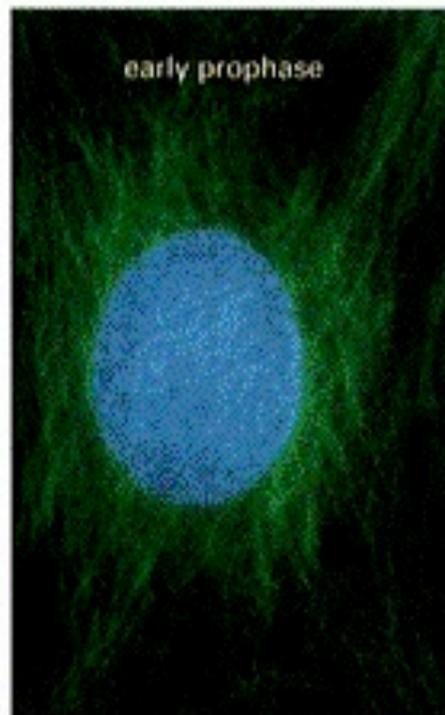
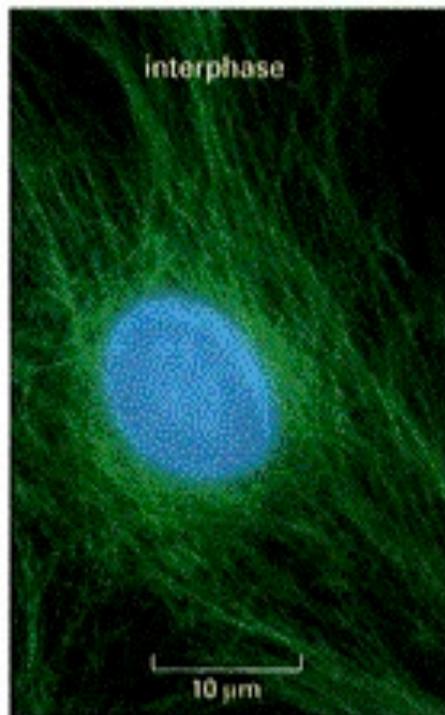
I CROMATIDI FRATELLI SI SEPARANO DIVIDENDO EQUAMENTE I CROMOSOMI NELLE DUE CELLULE FIGLIE



LA MITOSI COMPORTA MOLTI CAMBIAMENTI MORFOLOGICI

MITOSI



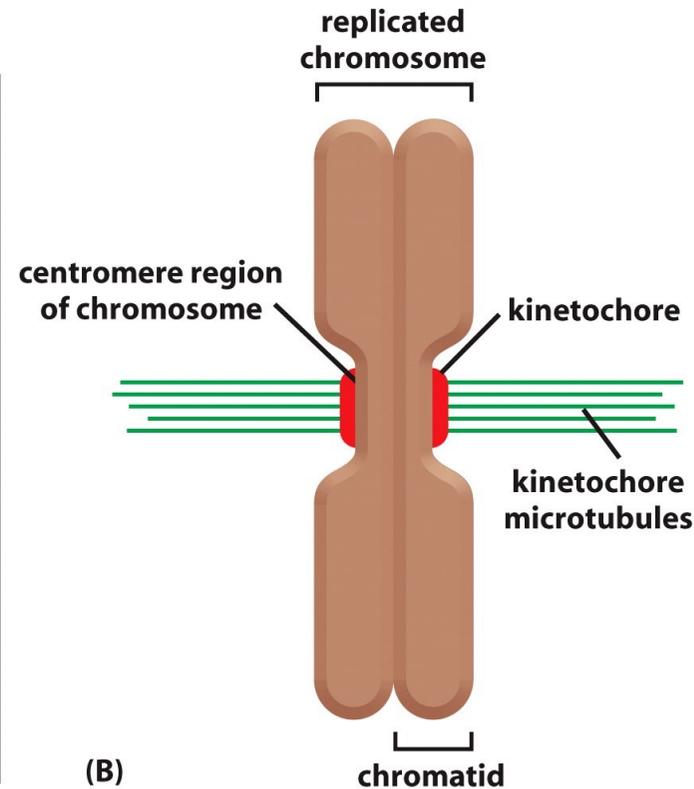
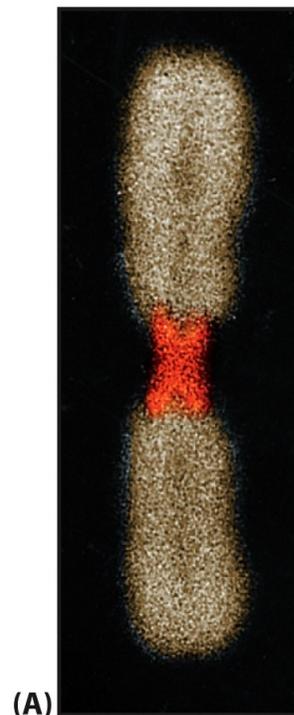


A CHE SERVE IL FUSO MITOTICO? COME FUNZIONA?



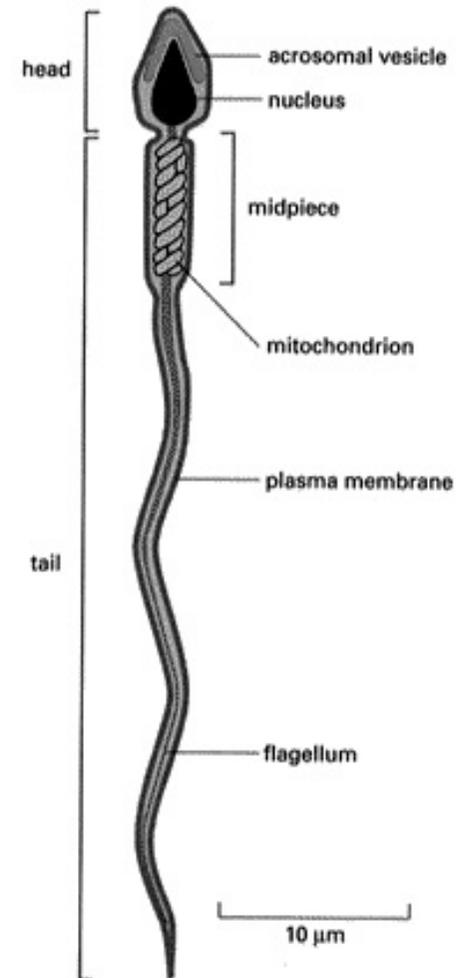
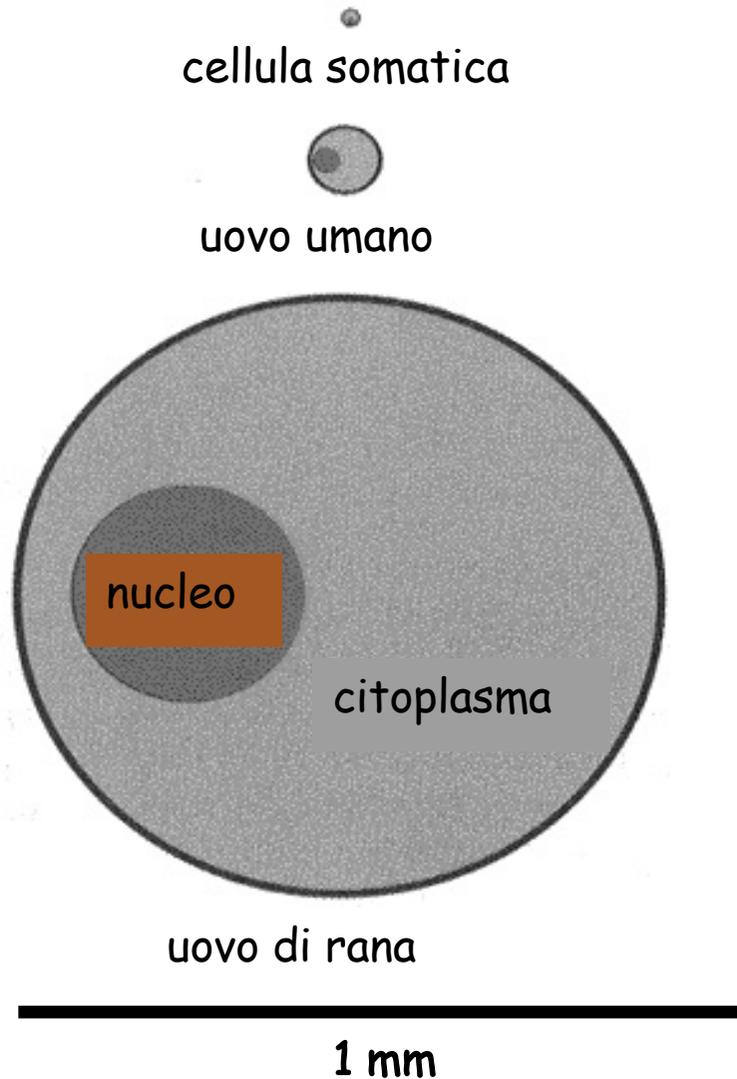
I MICROTUBULI DEL FUSO:

- ✓ SI LEGANO AI CROMOSOMI
- ✓ MUOVONO I CROMOSOMI
- ✓ SEPARANO I CROMATIDI



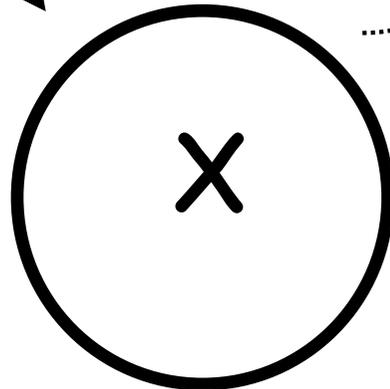
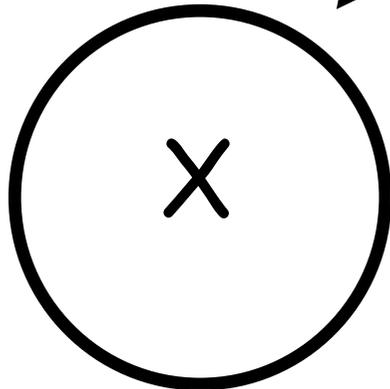
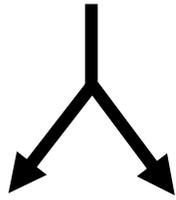
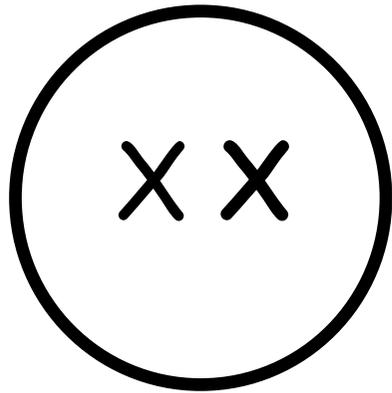
LA MEIOSI

LA MEIOSI È UNA MODALITÀ DI DIVISIONE CELLULARE CHE SI ATTUA PER FORMARE I GAMETI

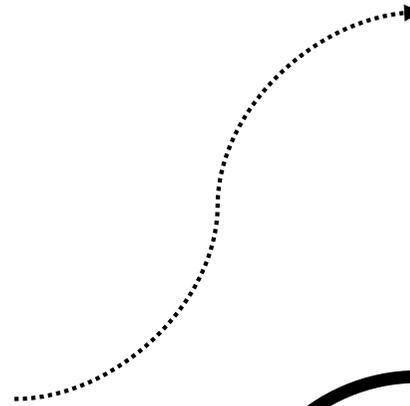
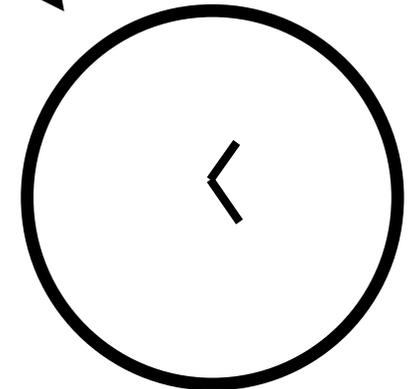
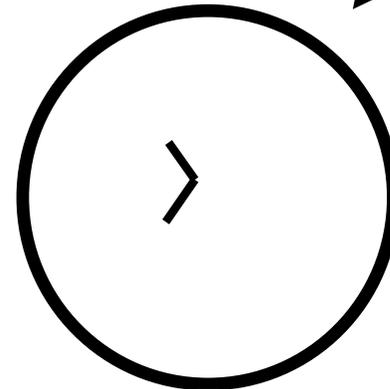
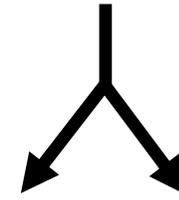
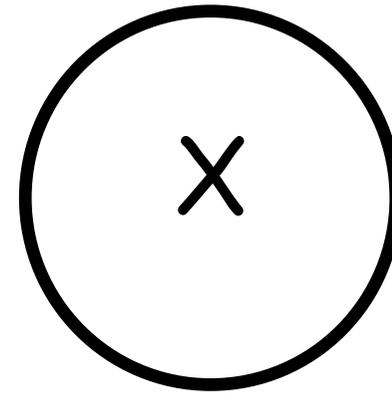


LA MEIOSI È UNA MODALITÀ DI DIVISIONE CELLULARE CHE SI ATTUA IN DUE FASI

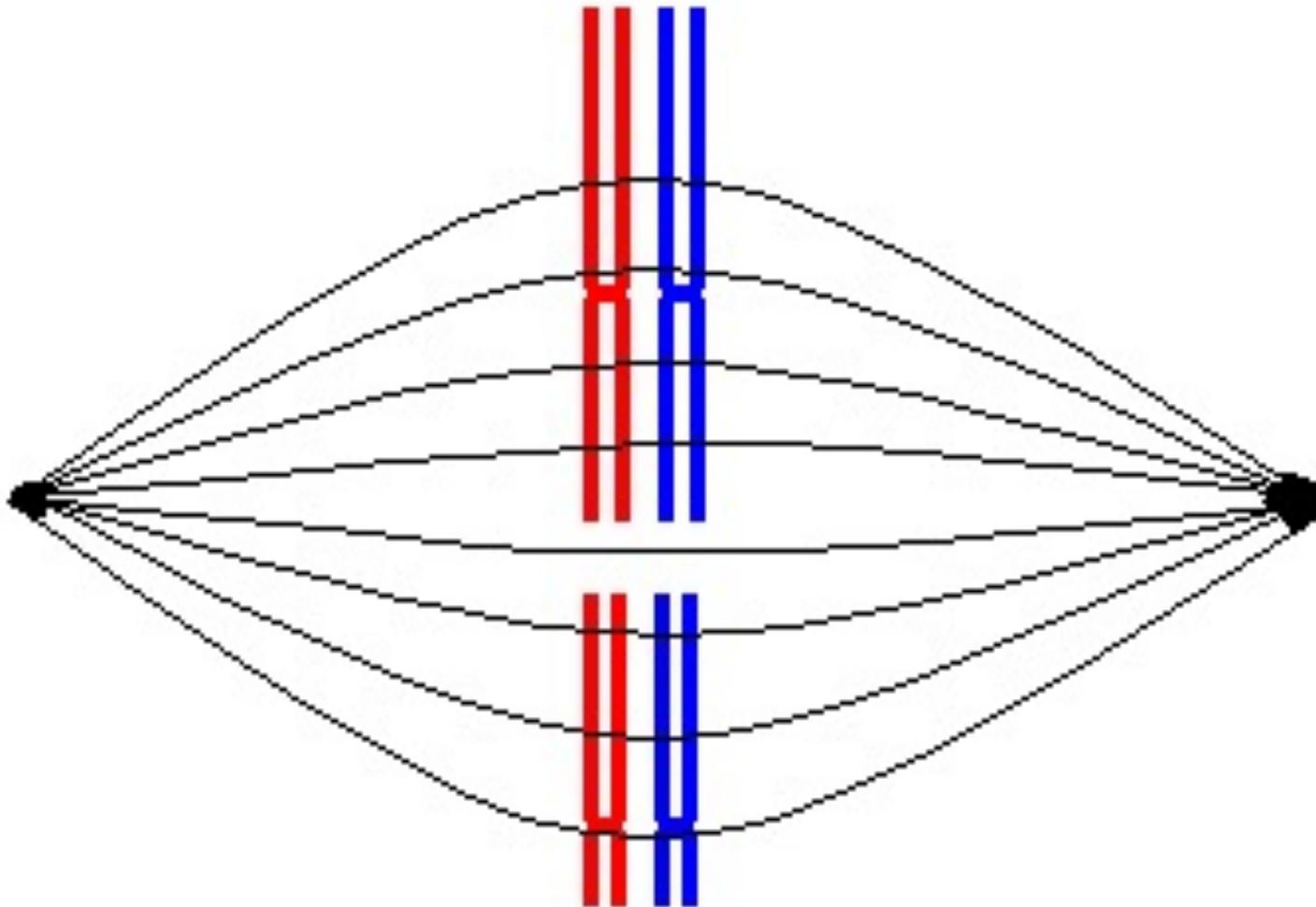
I divisione



II divisione



NELLA PRIMA DIVISIONE SI SEPARANO I
CROMOSOMI OMOLOGHI

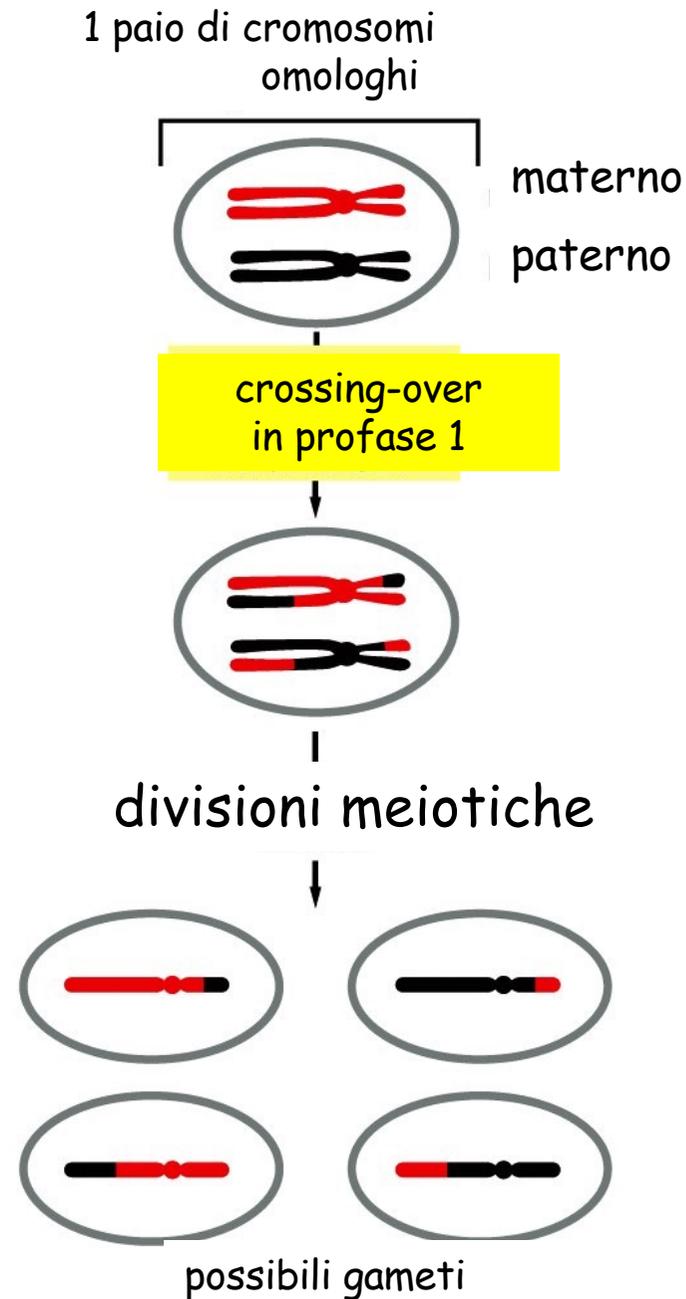


L'ASSORTIMENTO INDIPENDENTE DEI CROMOSOMI OMOLOGHI PORTA A VARIABILITÀ GENETICA



Figure 21-13a Molecular Biology of the Cell 5/e (© Garland Science 2008)

IL CROSSING-OVER PORTA A VARIABILITÀ GENETICA



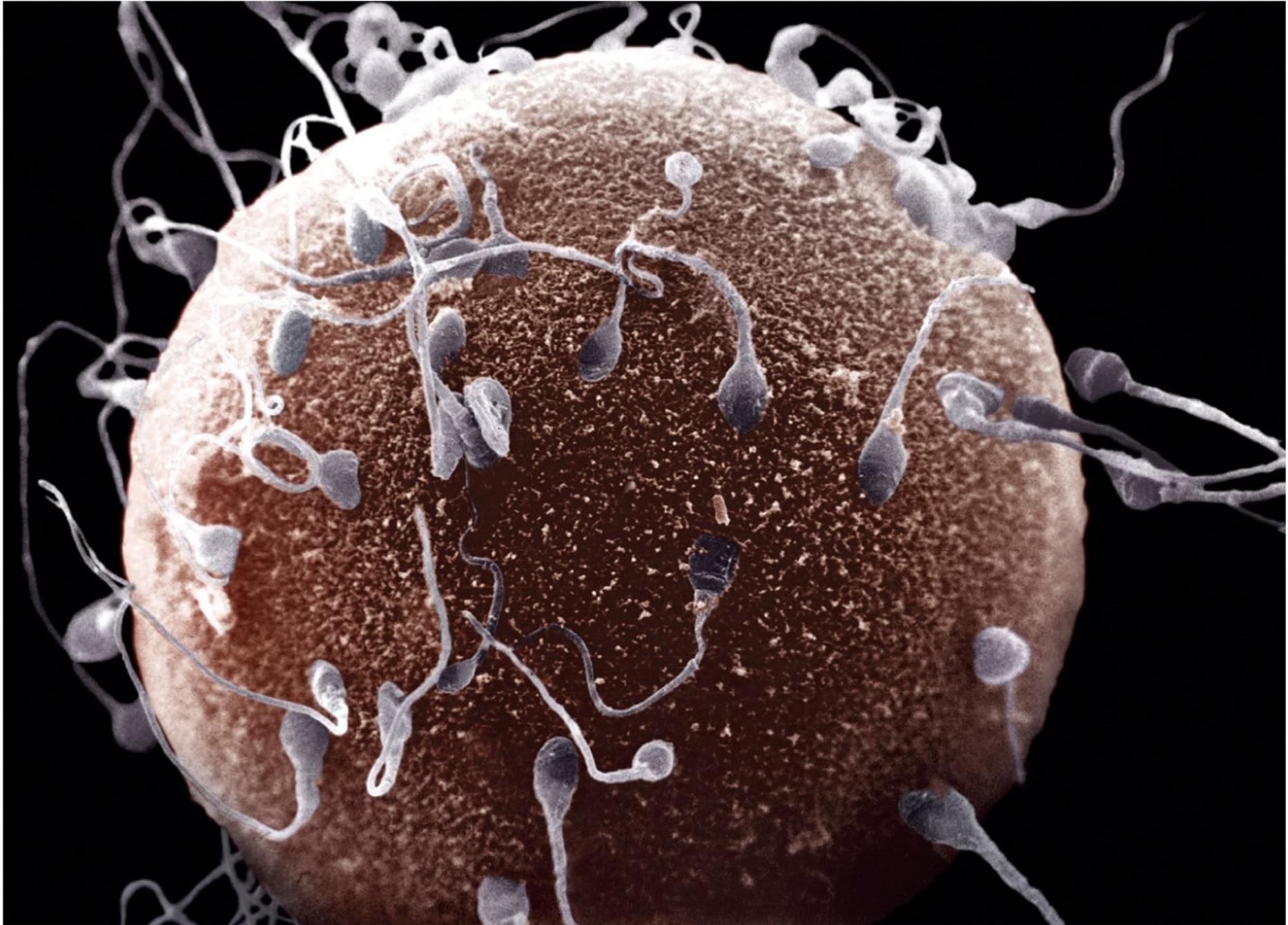
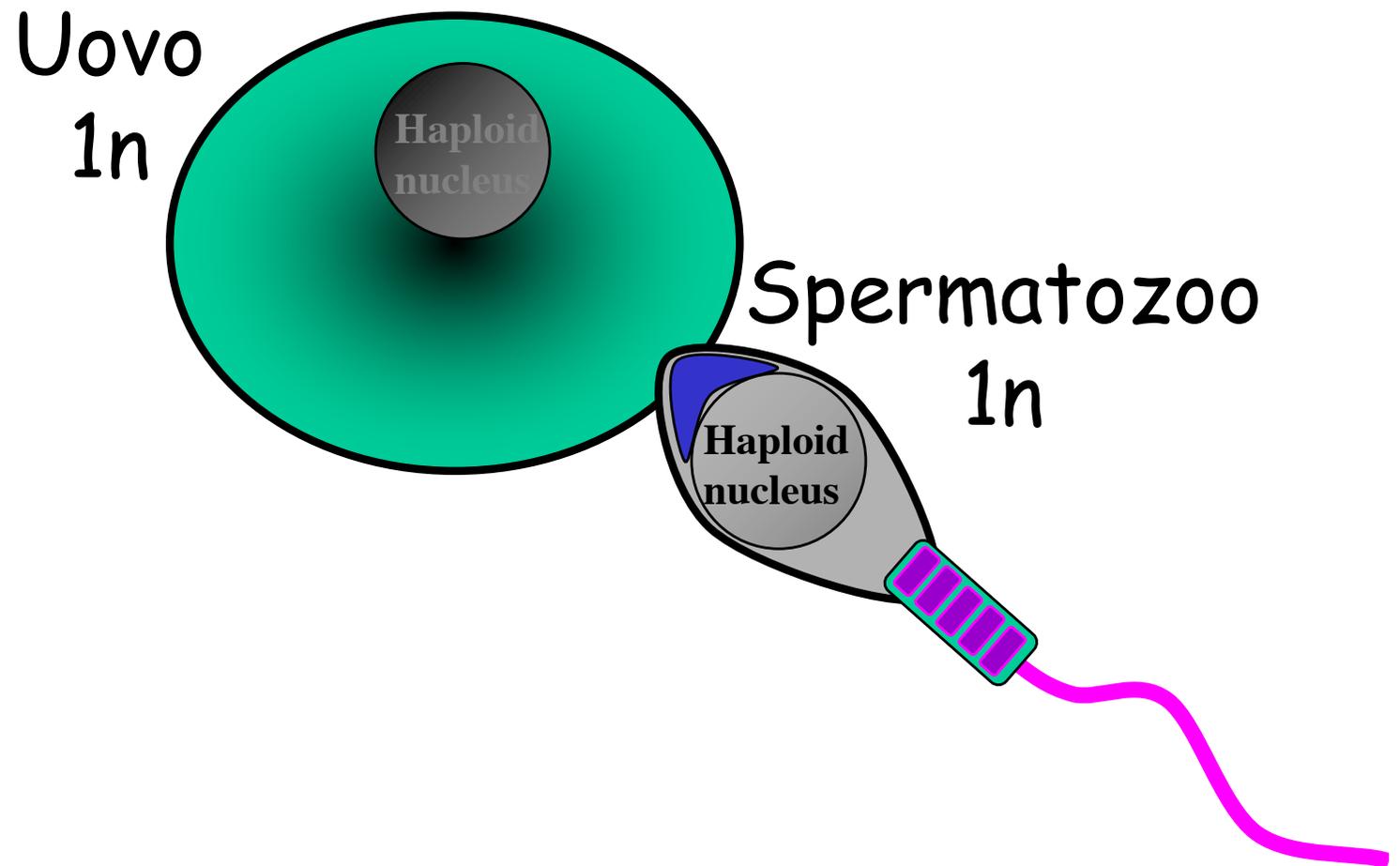
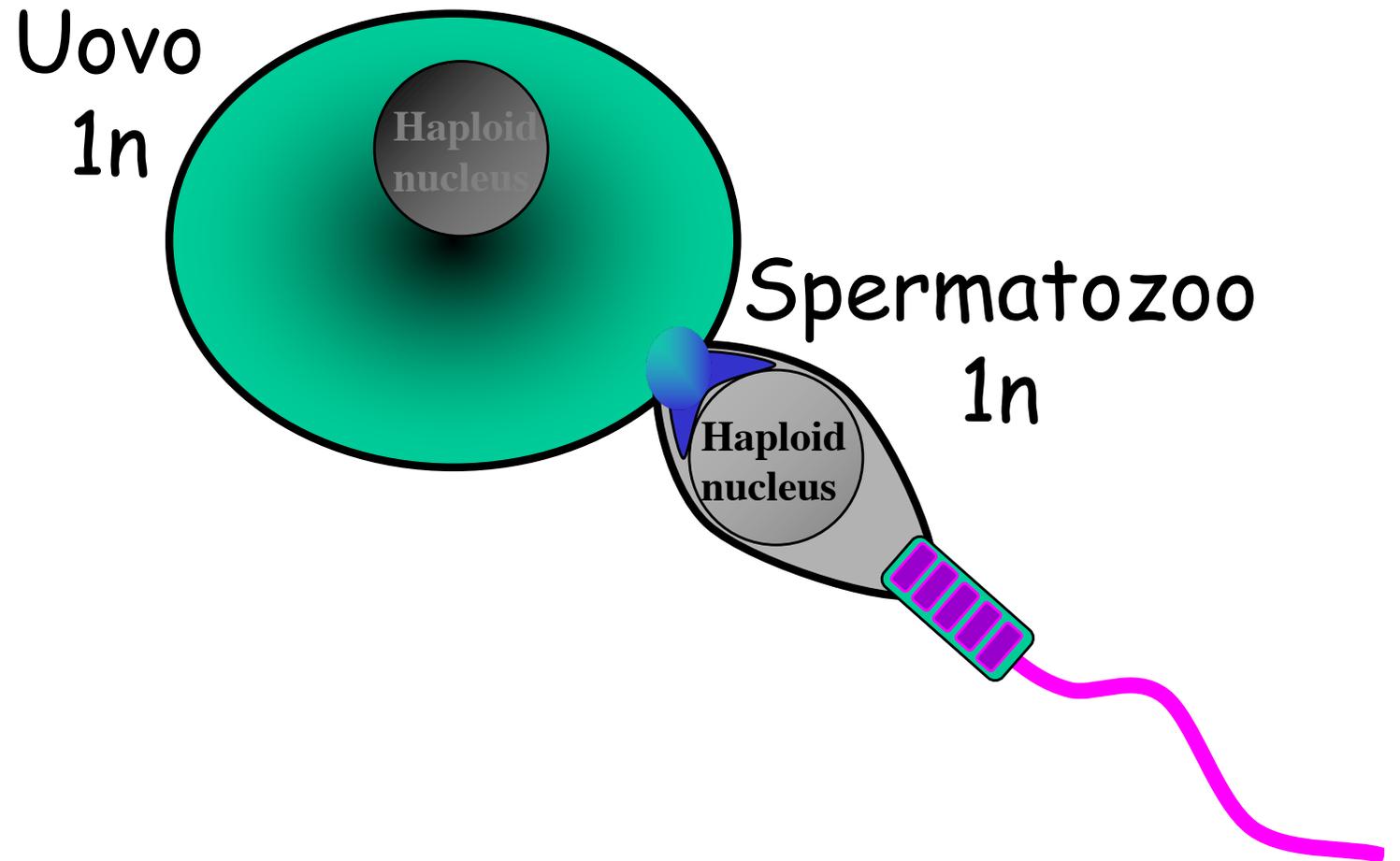


Figure 21-2 *Molecular Biology of the Cell* (© Garland Science 2008)

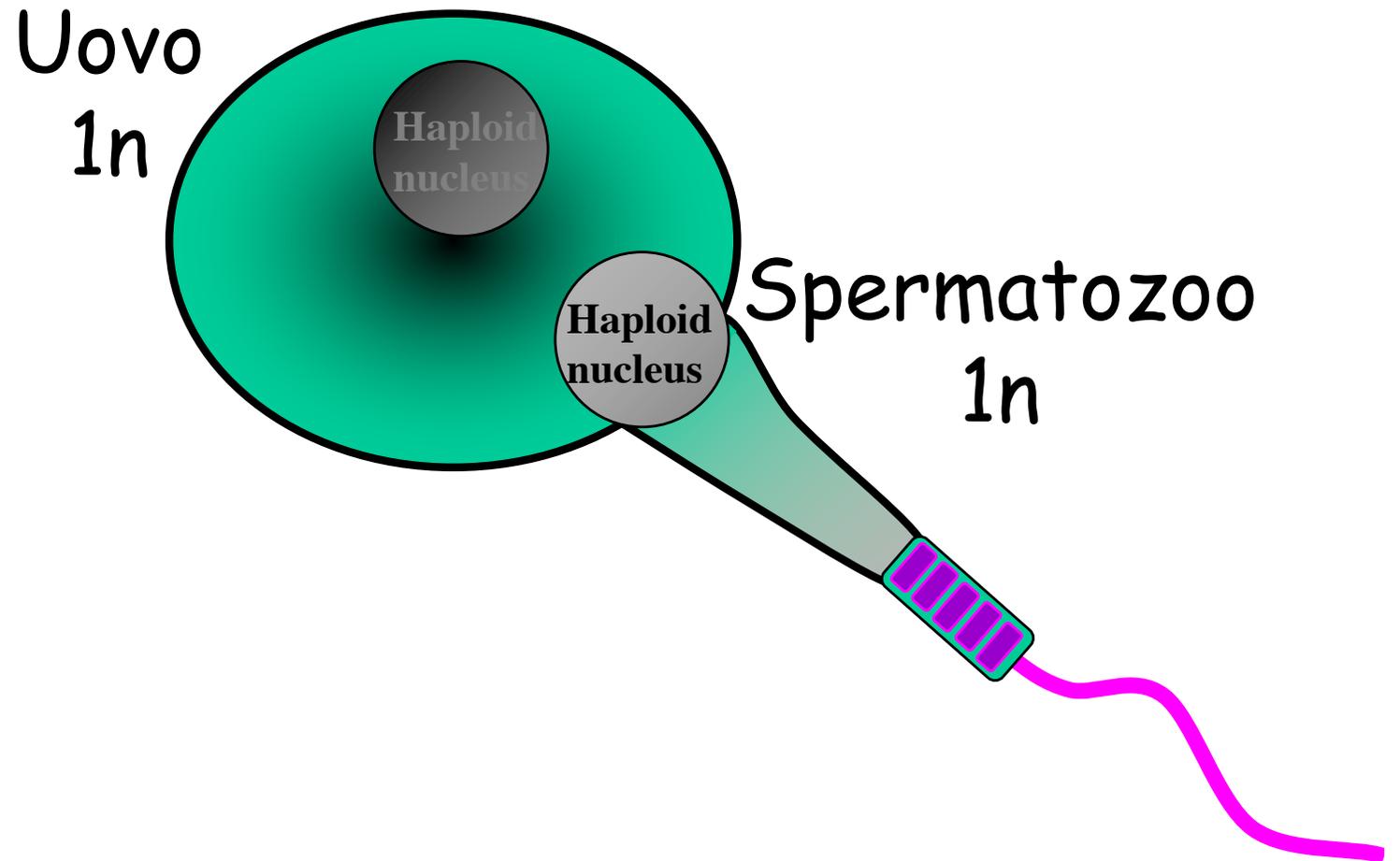
LA FECONDAZIONE PRODUCE UNO ZIGOTE DIPLOIDE



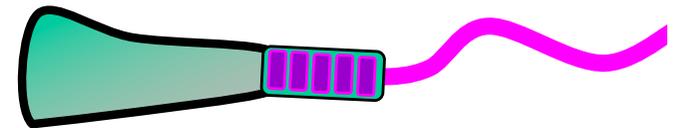
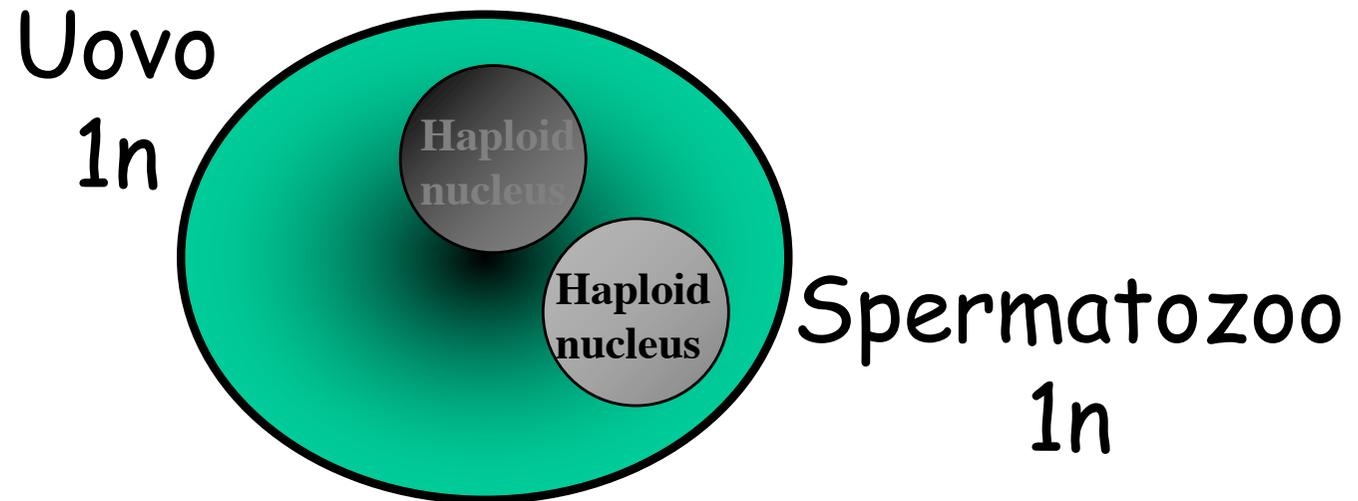
La fecondazione produce uno zigote diploide



La fecondazione produce uno zigote diploide

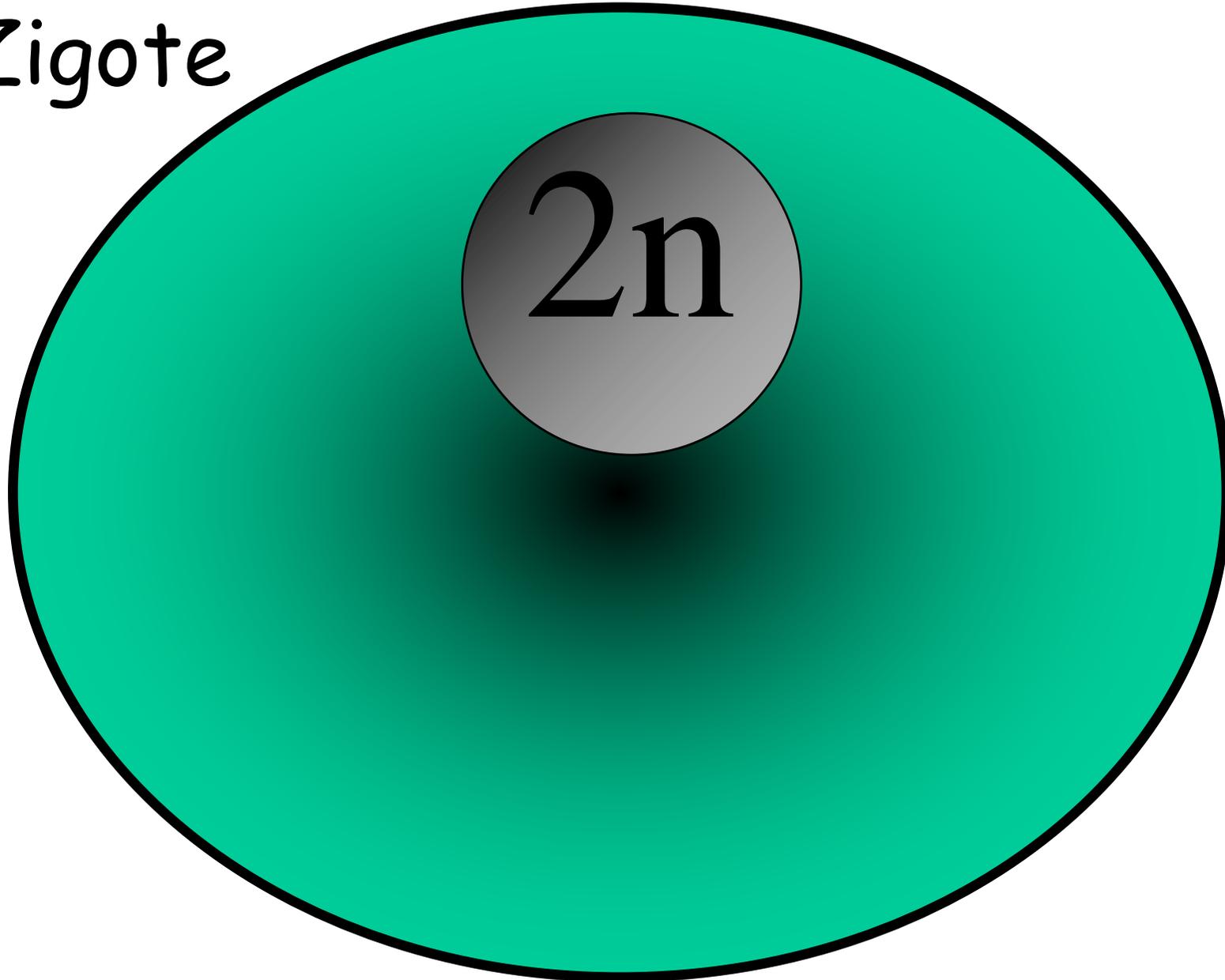


La fecondazione produce uno zigote diploide



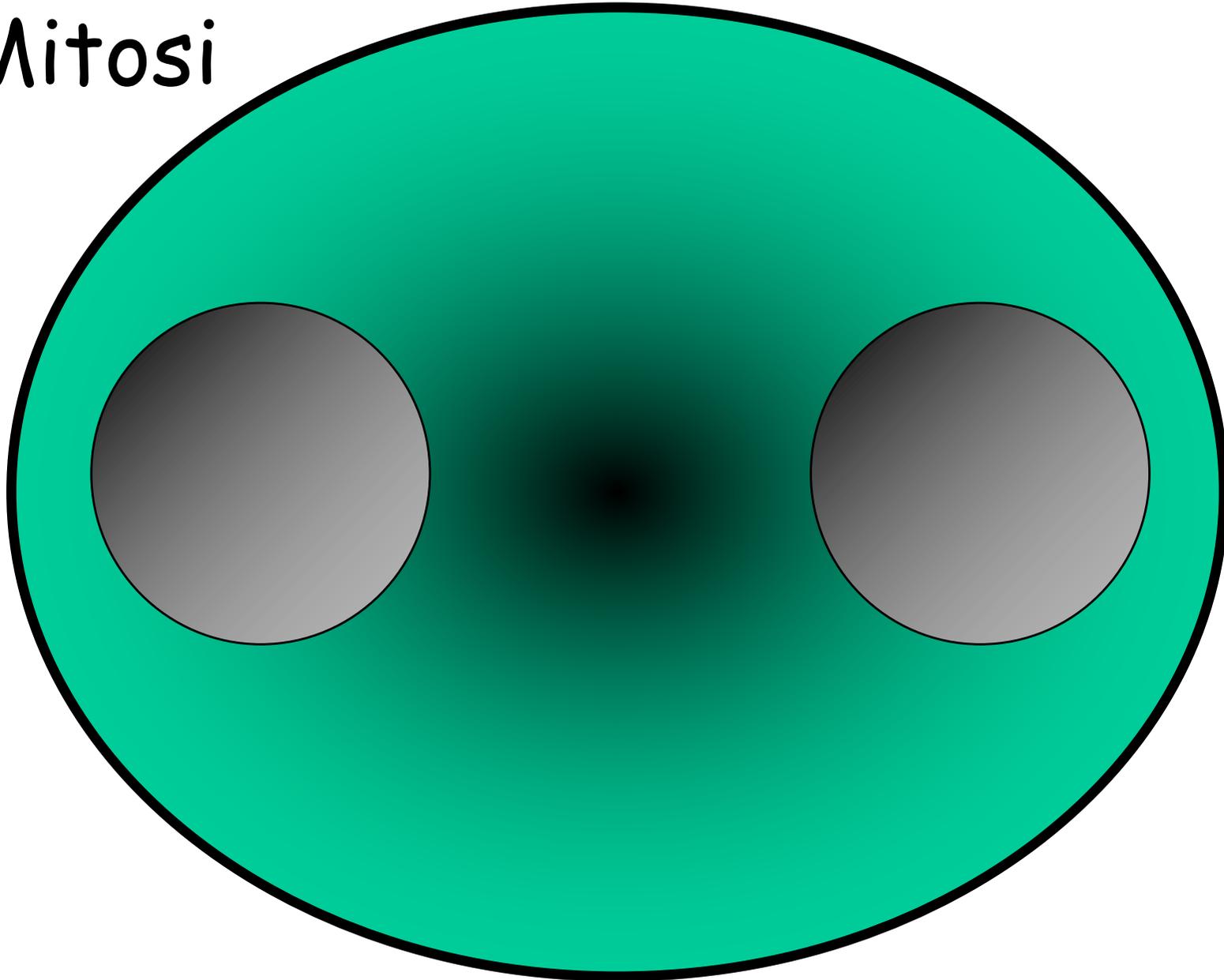
Dallo zigote deriva l'embrione

Zigote



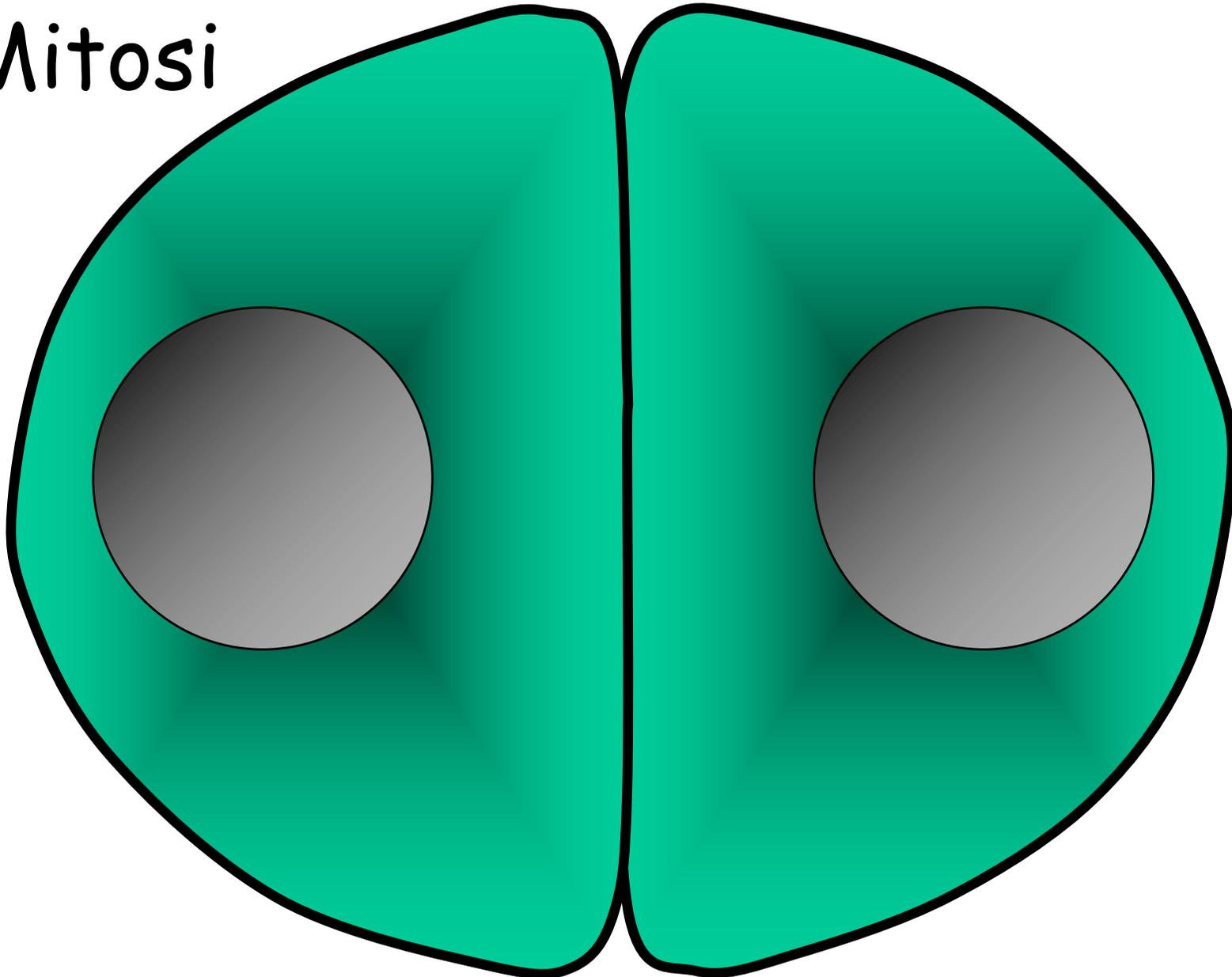
Dallo zigote deriva l'embrione

Mitosi



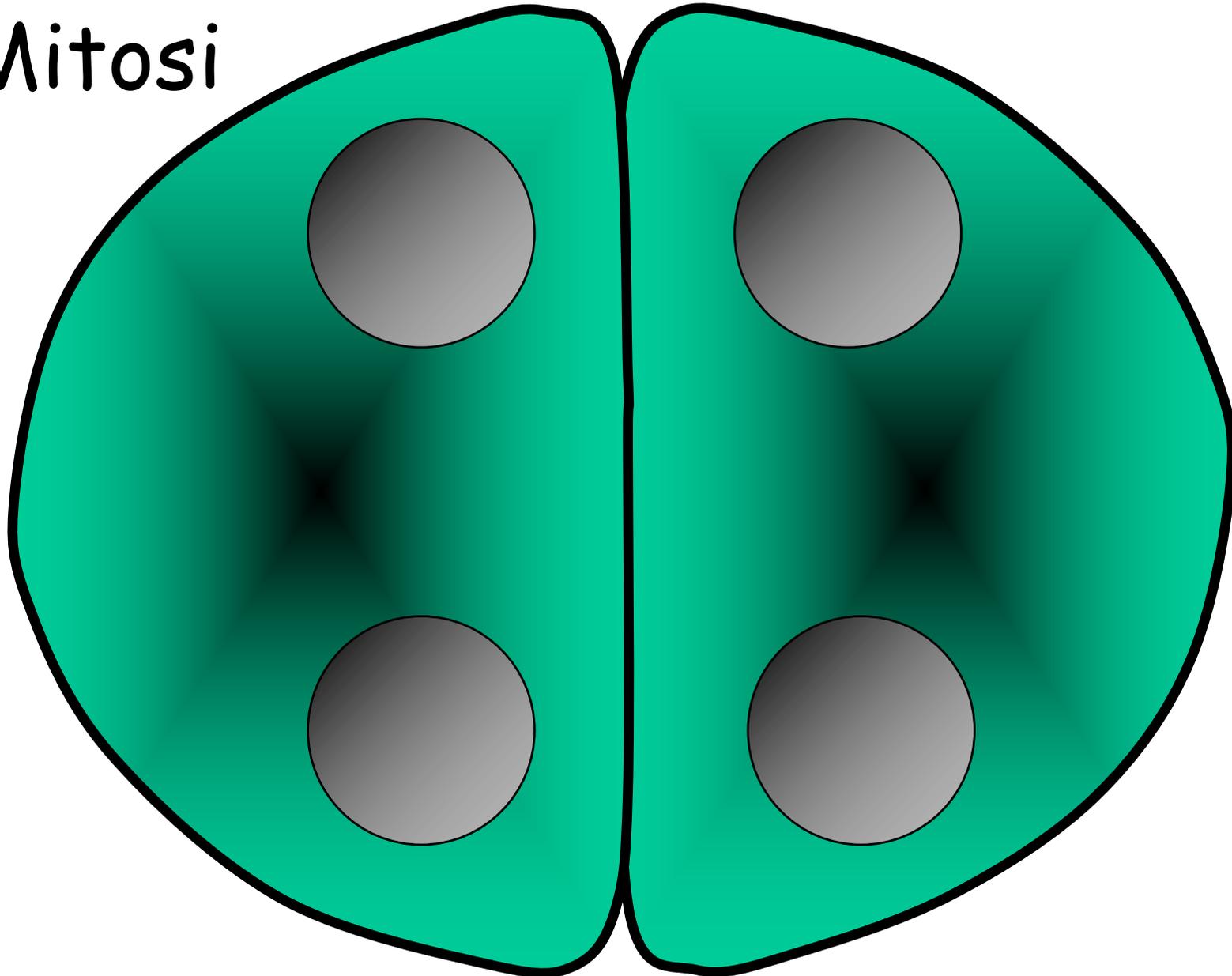
Dallo zigote deriva l'embrione

Mitosi



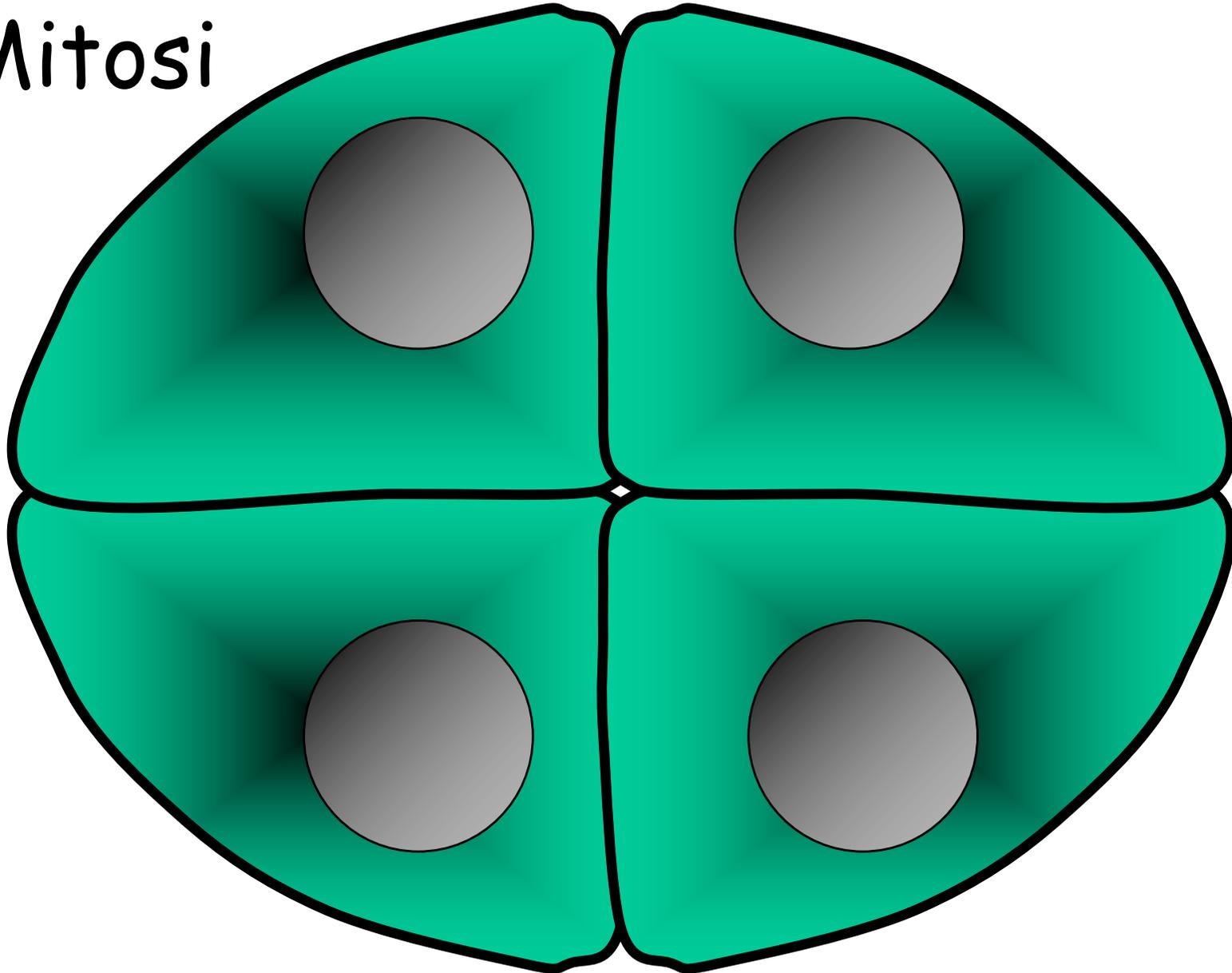
Dallo zigote deriva l'embrione

Mitosi



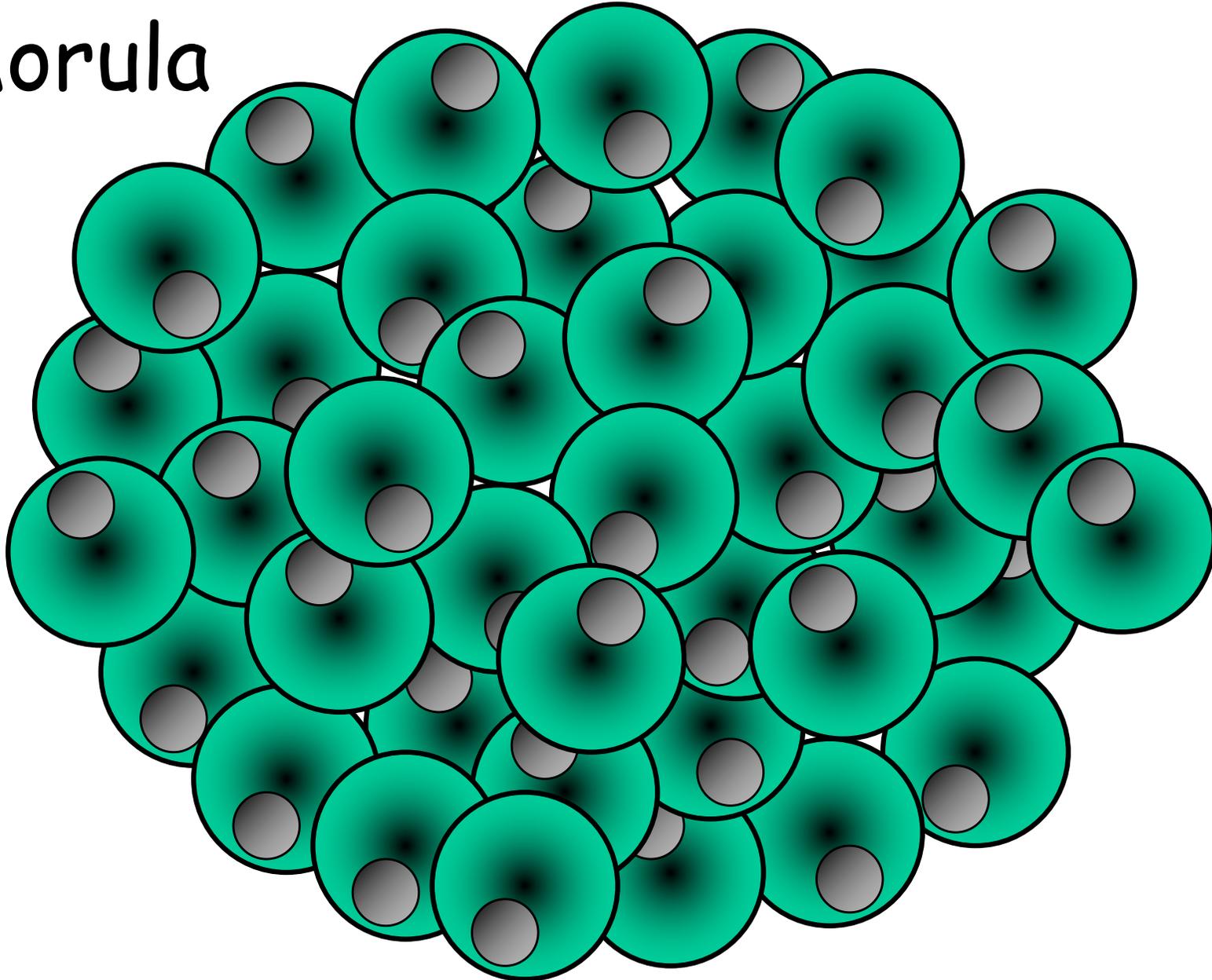
Dallo zigote deriva l'embrione

Mitosi



Dallo zigote deriva l'embrione

Morula



TAPPE DELLO SVILUPPO EMBRIONALE

MORULA

BLASTULA

GASTRULA

NEURULA

ORGANOGENESI

L'UNIONE DI GAMETI APLOIDI DETERMINA LA GENERAZIONE DI UN NUOVO ORGANISMO DIPLOIDE

