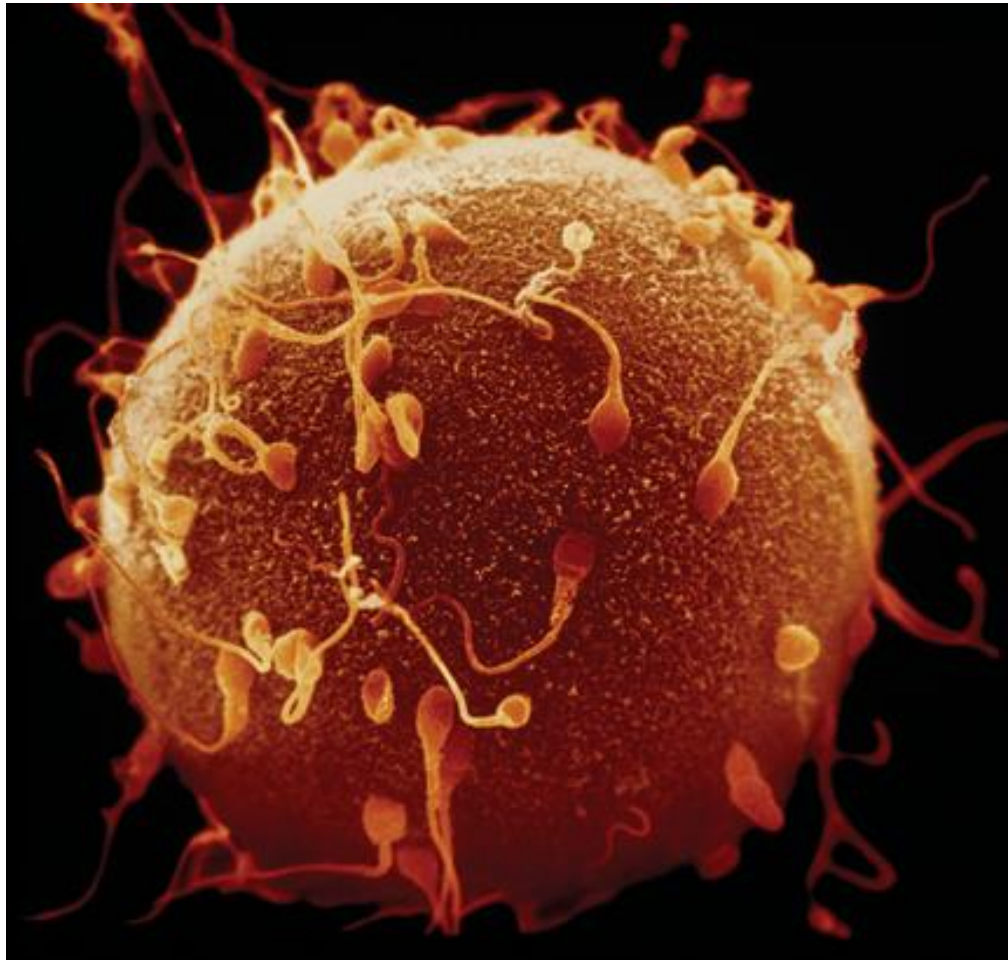


6.4 Traits, Genes, and Alleles

KEY CONCEPT

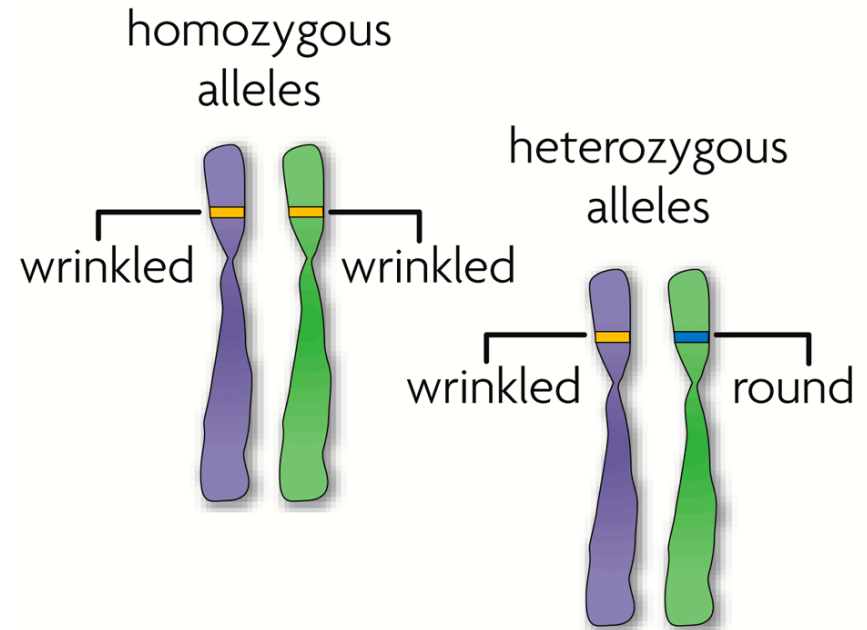
Genes encode proteins that produce a diverse range of traits.



6.4 Traits, Genes, and Alleles

- An **allele** is any alternative form of a *gene* occurring at a specific location on a chromosome.
 - Each parent donates one allele for every gene.
 - **Homozygous**: two *same* alleles
 - **Heterozygous**: two *different* alleles

Homozygous alleles are identical to each other.



Heterozygous alleles are different from each other.

6.4 Traits, Genes, and Alleles

▶ Genes influence the development of traits.

- A **genotype** refers to the genetic makeup.
- A **phenotype** is the physical expression of a trait.

Genotype:

Aa

Phenotype:



6.4 Traits, Genes, and Alleles

- Alleles can be represented using letters.

- **Dominant:**

- Represented with capital letters
- Expressed when at least one allele is dominant: RR, or Rr

- **Recessive:**

- Represented with lowercase letters
- Expressed only when two copies are present: rr

