

CONCEPT: PLEIOTROPY

- **Pleiotropy** describes when a single gene has multiple effects on the phenotype of an organism

□ Pleiotropy occurs in _____ main ways

1. Expression of a single gene can have multiple functions
2. Gene is expressed in different cell types in multicellular organisms
3. Gene is expressed at differential stages of development

EXAMPLE: Cystic fibrosis CFTR protein

- CFTR is a transmembrane protein that balances Cl^- concentrations
 - When mutated, it can no longer do this properly
 - Results in thick mucus in lungs, and excessively salty sweat, among other issues

