

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY(KNUST)

COLLEGE OF HEALTH SCIENCES

FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF MEDICAL DIAGNOSTICS

PROGRAM: BSC. MEDICAL LABORATORY SCIENCES

COURSE: MEDICAL GENETICS

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ASSIGHGNMENT TWO (2)



Germplasm Theory

The Germplasm Theory, proposed by August Weismann in the late 19th century, is a fundamental concept in genetics and evolutionary biology. It distinguishes between germ cells (sperm and egg) and somatic cells (all other body cells) in an organism.

Key Points

1. Separation of Somatic and Germplasm: In Weismann's view, only in the germplasm can heredity take place, and with a strong position that any variation in somatic cells will not pass down to offspring.
2. Germ Cells: Sex cells (sperm and eggs) that pass genetic information to offspring.
3. Somatic Cells: All of the cells in the body that don't pass on heredity information
4. Weismann Barrier: Somatic variation in an organism's life span doesn't affect the germ cells and, therefore, doesn't affect heredity of characters.
5. Role of Germplasm in Evolution: In terms of the genetic matter in the germplasm, according to Weismann, natural selection acts, and through it, beneficial characters arise over a long period of time.

Implications

1. Rejection of Lamarckism: Theory of Germplasm removed the theory of acquired characters being hereditary.

2. Foundation for Modern Genetics: Weismann's theory established modern genetics in that it emphasized the function of germ cells in heredity.
3. Distinction between Somatic and Germ Cells: As theory holds, the most significant differentiation between somatic and germ cells in relation to inheritance.