

# Portal: Biology and Genetics



## Biology and Genetics

### Useful links

#### Examination

- [Exam Topics in Biology and Medical Genetics \(1. LF UK, GM\)](#)
- [Exam Topics in Biology and Medical Genetics \(1. LF, D\)](#)

#### Links

- [All articles in Category Genetics](#)
- [Commented internet links](#)
- [Commented list of recommended study literature](#)

#### Institutes

- [Institute of Biology and Department of Medical Genetics, 1<sup>st</sup> Faculty of Medicine, Charles University, Prague](#)
- [Department of Biology and Medical Genetics, 2<sup>nd</sup> Faculty of Medicine, Charles University, Prague](#)
- [Department of General Biology and Genetics, 3<sup>rd</sup> Faculty of Medicine, Charles University, Prague](#)

### Biology and Genetics

#### Fundamental Genetics

- [Genome](#)
- [Locus](#)
- [Phenocopy](#) • [Genocopy](#)
- [Genomic Imprinting](#)
- [Description of the Chromosome](#) • [Chromosome Number and Structure](#)
- [Laws of Inheritance](#)
- [Extrachromosomal and Non-Mendelian Inheritance](#)
- [Genetic Linkage](#)
- [Heritability](#)
- [Pleiotropy](#)
- [Backcross](#)
- [Hemizygote](#) • [Heterozygote](#) • [Homozygote](#)
- [Haploid](#) • [Diploid](#)
- [Haplotype](#)

#### Molecular Genetics

- [Gene Mutations](#)
- [DNA Repair](#) • [Mutagenesis and DNA Repair](#)
- [Protein Polymorphism](#)
- [Eukaryotic Chromosomes](#)
- [PCR](#)
- [Blotting Methods](#)
- [Comparative Genomic Hybridisation](#)
- [Genetic Code](#)
- [DNA Repair Mechanisms and their Disturbances](#)

#### Prokaryotes

- [DNA Replication](#)
- [Structure and Function of Prokaryotes](#) • [Prokaryotic Chromosomes](#) • [Gene Expression in Prokaryotes](#)
- [Archaea](#)

#### Cytogenetics

- [Karyotype](#)
- [Chromosome abnormalities](#) • [Etiology of Chromosome Abnormalities](#) • [Inversion](#) • [Isochromosomes](#) • [Crossing-over](#) • [Deletion](#) •

#### Cell Cycle

- [The Cell Cycle](#)
- [Meiosis](#)
- [Mitosis](#)
- [Gametogenesis](#)

#### Clinical Genetics

- [Gene Therapy](#) • [Vectors](#)
- [Protooncogenes](#) • [Tumor Suppressor Genes](#)
- [Cancer Families](#)

#### Diagnostic Methods

- [Prenatal Diagnosis of Chromosome Abnormalities](#)
- [DNA Diagnostic Direct Methods](#)
- [DNA Diagnostic Indirect Methods](#)
- [Indications for Chromosome Analysis](#)
- [Genetic Linkage Analysis](#)
- [Genetic Counseling](#)
- [Population Screening](#)
- [Cordocentesis](#) • [Chorionic Villus Sampling](#)

#### Autosomal Disorders

- [Leiden Mutation](#)
- [Beckwith-Wiedemann Syndrome](#)
- [Cystic Fibrosis](#)
- [Sickle Cell Anemia](#)

#### Gonosomal Disorders

- [Fragile X Syndrome](#)

#### Chromosomal Abnormalities

- [Disorders of the Sex Chromosomes](#)
- [Down Syndrome](#)
- [Patau Syndrome](#)
- [Klinefelter Syndrome](#)
- [Turner Syndrome](#)

#### Microdeletion Syndromes

- Translocation
- Cell and Tissue in vitro Cultivation

### **Human Genetics**

- Transplantation
- Twins and Twin Studies
- Family Studies, Pedigree Analysis

### **Environmental Genetics**

- Genotoxic Substances

### **Ecology and Genetics**

- Nutrigenetics

### **Immunogenetics**

- Major Histocompatibility Complex

- Angelman Syndrome
- Prader-Willi Syndrome

- Genotype Variation, Mutations and Recombination
- Multifactorial Inheritance, Heritability • Multifactorial Inheritance
- Polygenic Inheritance

### **Other genetic diseases**

- Osteogenesis Imperfecta

### **Population and Evolutionary Genetics**

- Population
- Genetic Drift
- Coefficient of Inbreeding • Coefficient of Relatedness
- Selection

### **Experimental Genetics**

- Genetic Mapping • HUGO
- Gene Manipulation
- Cloning
- Congenic Strain • Consomic Strain
- Recombinant DNA