

1. The *deoxyribo* part in the name deoxyribonucleic acid refers to the

- principle of complementarity
- bonds that hold the two strands together
- sugar component of the DNA molecule
- type of helical arrangement

2. A protein that can initiate or repress gene activity is called...

- enzyme
- hormone
- transcription factor
- receptor

3. Which of the following proteins is an enzyme?

- hemoglobin
- collagen
- DNA-polymerase
- myoglobin

4. Which of the diagrams below shows the correct structure of a nucleic acid?

**RNA**

**mRNA – messenger RNA**

**tRNA – transfer RNA**

**rRNA – ribosomal RNA**

**transcription – RNA assembly on a DNA template**

**TRANSLATION – protein assembly on mRNA template**

mRNA

**AUG U C A G G C C C G C A A U G U A G**

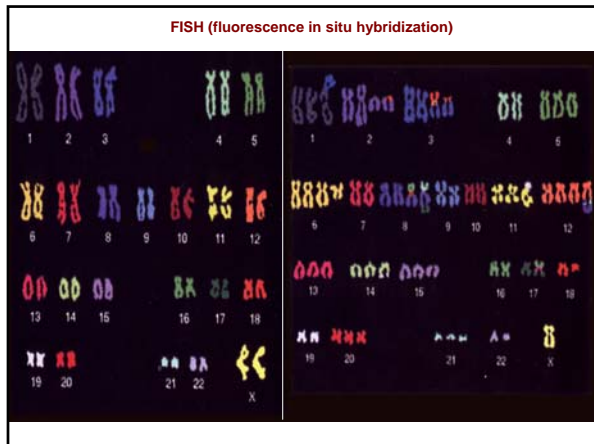
**STOP**

**body cells**

<p><b>diploid somatic</b></p> <p>2 sets of DNA</p> <p>2 sets of every gene</p> <p>2 sets of chromosomes</p>	<p><b>haploid gametes (sperm and oocytes)</b></p> <p>1 set of DNA</p> <p>1 set of every gene</p> <p>1 set of chromosomes</p>
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**chromosome = DNA + proteins (histones)**

**Karyotype**



**MUTATIONS – changes in the DNA sequence**

A A T T C A C C G G G G G C A T A C A C T  
 T T A A G T G A C C C C C G T A T G T G A

**Alleles** – different versions of the same gene

**A diploid cell can be:**

**Homozygous** – having 2 identical alleles AA bb S<sup>1</sup> S<sup>1</sup>

**Heterozygous** – having 2 different alleles for the same gene: Aa Bb S<sup>1</sup> S<sup>2</sup>

