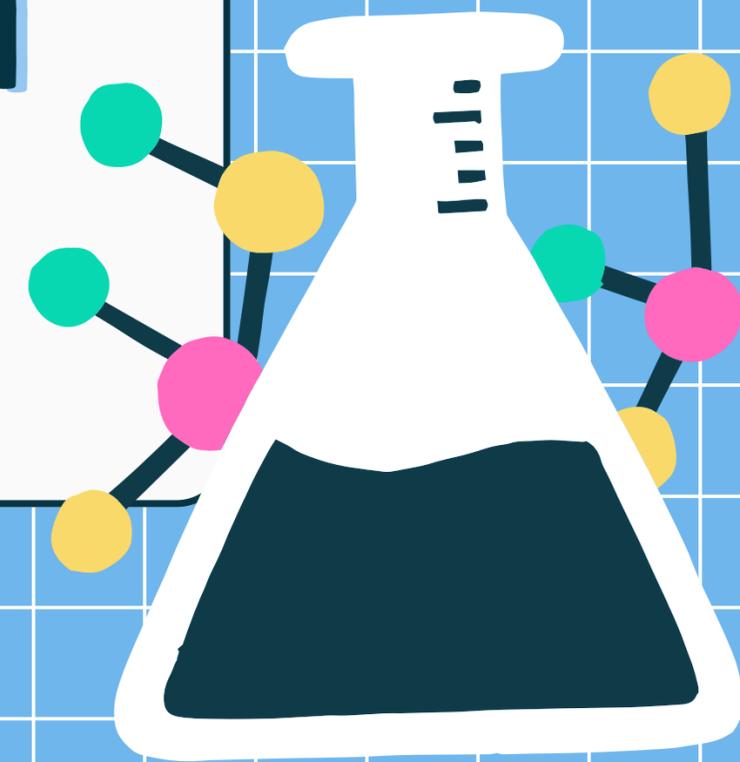


# PURINES AND PYRIMIDINES SECOND STAGE

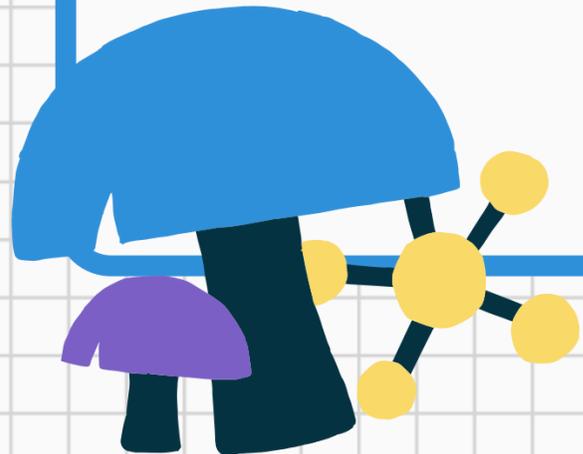
DR. RASHAD AL - TUUAMAH  
MEDICAL BIOCHEMISTRY



## **PURINES AND PYRIMIDINES :**

**PURINES AND PYRIMIDINES ARE TWO TYPES OF NITROGENOUS BASES THAT PLAY ESSENTIAL**

**ROLES IN NUCLEIC ACIDS, SUCH AS DNA AND RNA. HERE`S A BRIEF OVERVIEW OF EACH:**



## **PURINES:**

**STRUCTURE: PURINES HAVE A TWO-RING STRUCTURE (A SIX-MEMBERED AND A FIVE-MEMBERED RING).**

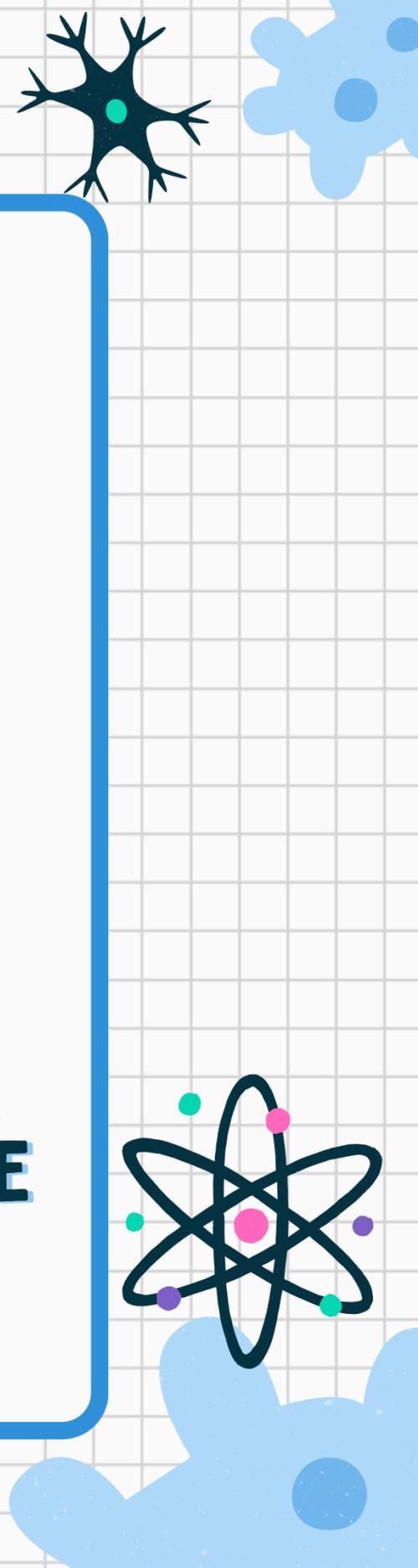
**EXAMPLES: ADENINE (A), GUANINE (G). FUNCTION: THEY ARE INVOLVED IN THE FORMATION OF NUCLEOTIDES, WHICH ARE THE BUILDING BLOCKS OF DNA AND RNA.**

**PURINES ALSO PARTICIPATE IN ENERGY TRANSFER (E.G., ATP).**

## **PYRIMIDINES:**

**STRUCTURE: PYRIMIDINES HAVE A SINGLE-RING STRUCTURE. EXAMPLES: CYTOSINE (C), THYMINE (T) (FOUND IN DNA), URACIL (U) (FOUND IN RNA). FUNCTION: LIKE PURINES,**

**PYRIMIDINES ARE ESSENTIAL COMPONENTS OF NUCLEOTIDES AND CONTRIBUTE TO DNA AND RNA SYNTHESIS.**

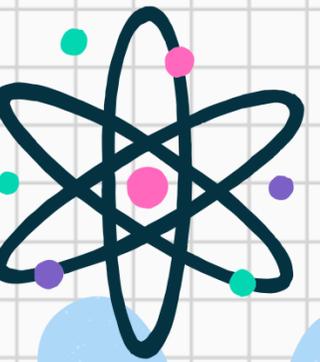
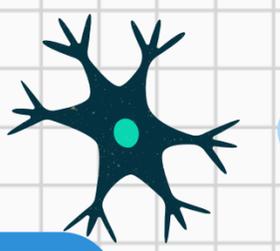


## **KEY DIFFERENCES:**

**STRUCTURE: PURINES HAVE A DOUBLE-RING STRUCTURE, WHILE PYRIMIDINES HAVE A SINGLE-RING STRUCTURE.**

**TYPES : PURINES INCLUDE ADENINE AND GUANINE, WHILE PYRIMIDINES INCLUDE CYTOSINE, THYMINE, AND URACIL.**

**THESE BASES PAIR TOGETHER IN SPECIFIC WAYS (A WITH T OR U, AND C WITH G) TO FORM THE STRUCTURE OF NUCLEIC ACIDS, PLAYING A CRUCIAL ROLE IN GENETIC INFORMATION STORAGE AND TRANSFER.**



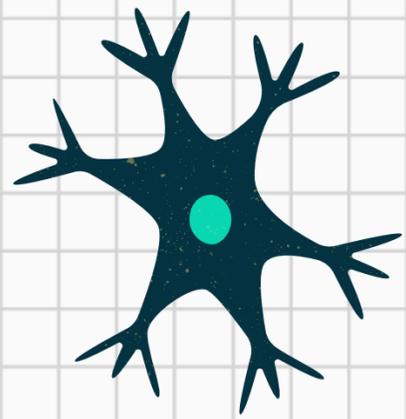


## **DIFFERENCE BETWEEN PURINE AND PYRIMIDINE :**

**PURINE: A PURINE IS A HETEROCYCLIC AROMATIC ORGANIC COMPOUND, CONSISTING OF A PYRIMIDINE RING FUSED TO AN IMIDAZOLE RING. (EXAMPLE: ADENINE).**

**PYRIMIDINE: PYRIMIDINE IS A HETEROCYCLIC AROMATIC ORGANIC COMPOUND SIMILAR TO BENZENE AND PYRIDINE, CONTAINING TWO NITROGEN ATOMS AT POSITIONS 1 AND 3 OF THE SIX-MEMBER RING. (EXAMPLE: CYTOSINE).**





**THANK YOU  
FOR YOUR  
ATTENTION!**

