TECHNOLOGY

DNA and RNA Model Set for Teaching and Learning of Molecular Biology

OVERVIEW

Innovative Technology

Researchers at the University of Maryland have designed a teaching tool for students to learn molecular biology of DNA and RNA. The key features of this new design aims to overcome limitation of previous models. It is ideally designed for different levels of learning. The models offer a balance between simplicity (hydrogen bonds between nucleic acids are present to allow for 2-D representation) and complexity (atoms and bonds are represented for manipulation).

APPLICATIONS

1. Nucleic acid model kits as learning tools to be used in academic environments or sold separately

ADVANTAGES

1. All nucleotides are pre-assembled with attachable and detachable parts
2. Bases are planer and fixed with the appropriate hydrogen donor or acceptor
3. Ribose or deoxyribose are in relative fix positions with carbon 1 (C1) available for attachment to bases, carbon 3 (C3) and carbon 5 (C5) available for attachment to phosphates
4. Phosphate can attach to C3 and C5 or other phosphates
5. The atoms within each part are fixed. The attachment allows parts to be connected, but rotatable

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Additional Information

INSTITUTION

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EXTERNAL RESOURCES

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