H2PO4 in the ribonucleotides

by Robert William Whitby
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References

1. Robert William Whitby, octahedron1sted.pdf
2. Robert William Whitby, PeriodicTable.pdf
3. Lubert Stryer, Biochemistry 2d ed., Ch. 22, Biosynthesis of the nucleotides, p. 511

Introduction

This document shows how the H2PO4 units are connected with the three-carbon helical turn of both ribose and deoxyribose in the formation of the ribonucleotides adenylate, guanylate, uridylate, cytidylate, and thymidylate.

Part 1: Assembly of the H2PO4 group as viewed perpendicular to the 521-face of the P-atom

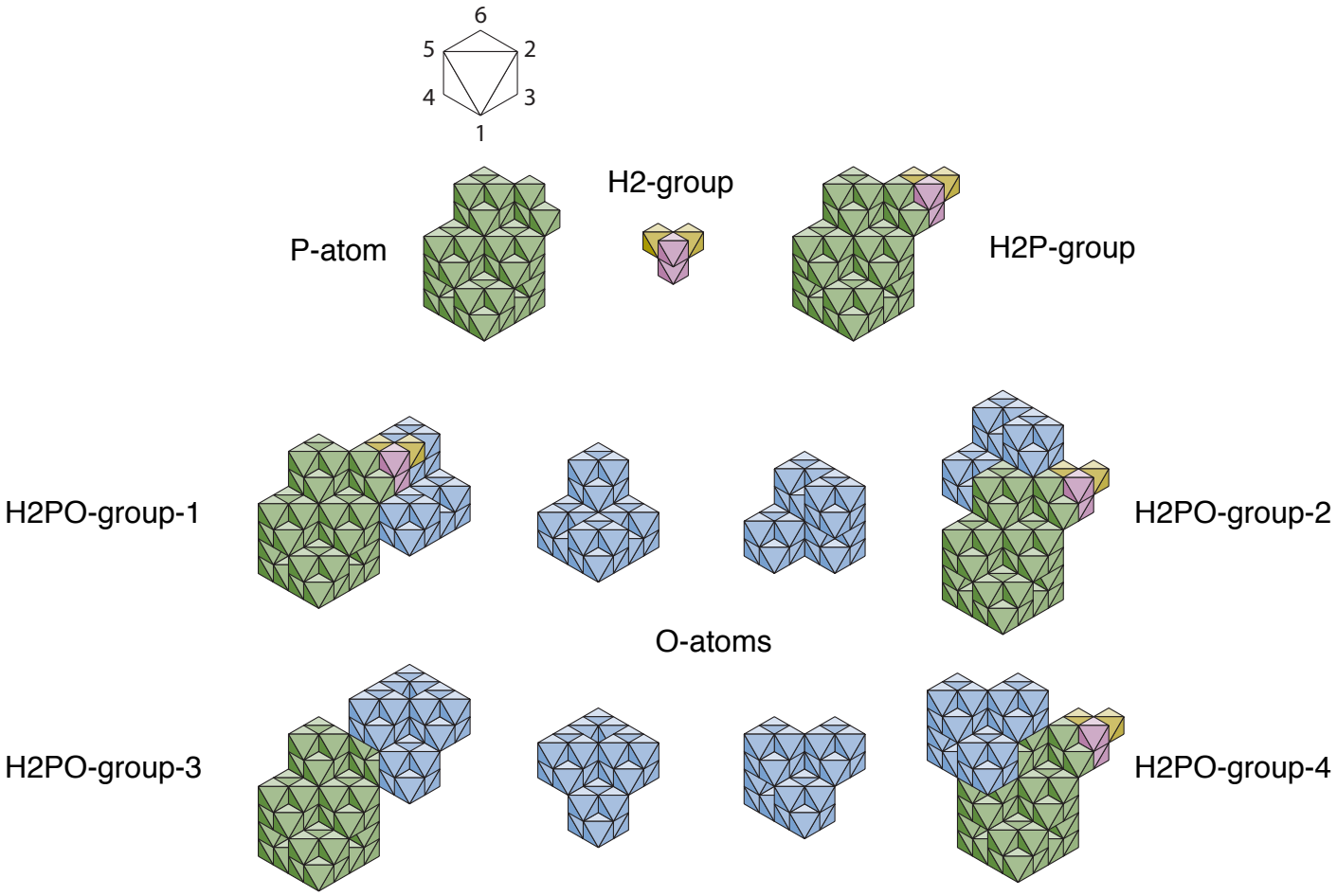
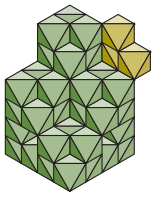


Figure 1:Placement of the O-atoms on the H2P-group.
Each of the four O-atoms is uniquely sited on the P-atom to make the H2PO4-group.



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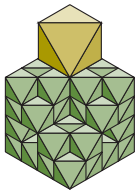

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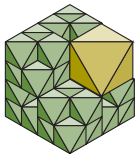

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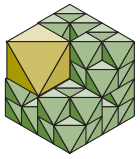

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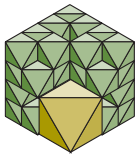

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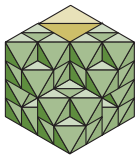
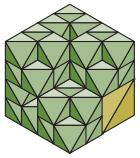


Mg



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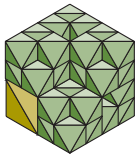

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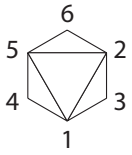

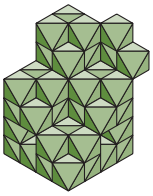

P-atom

Figure 2: Referencing the He-octas of the P-atom based on the assembly of the atomic elements.

The He-octas of the P-atom are referenced as shown in the figure for the purpose of discussing the siting of the O-atoms of the H2PO4-group.

The P-triplet is shown in yellow at the top of the right column.

The Si-octa is shown in yellow, and the triplet has been removed in the second figure of the column.

The Be-octa is shown in yellow in the third figure; the Si-octa has been removed leaving only the Mg-portion of the P-atom.

The Ne-octa is shown in yellow in the fourth figure of the column.

The He-octa is shown in yellow in the fifth figure.

The Mg-octa is shown in the sixth figure.

The C-octa is shown in the seventh figure.

The O-octa is shown in yellow in the eighth, and last, figure of the right hand column.

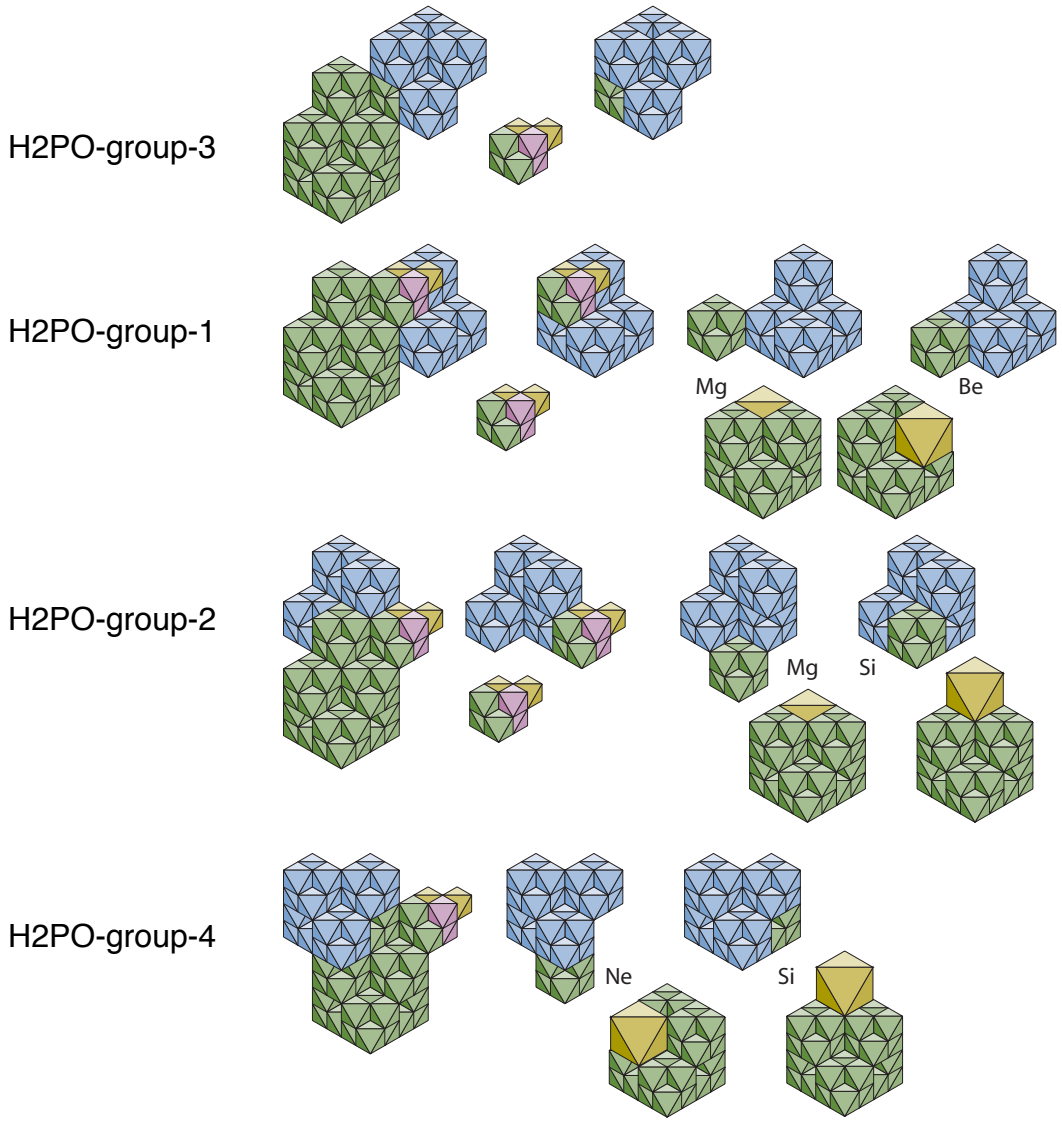

Figure 3: Examination of the attachments between the parts of the P-atom and each of the four O-atoms of the H2PO4-group.

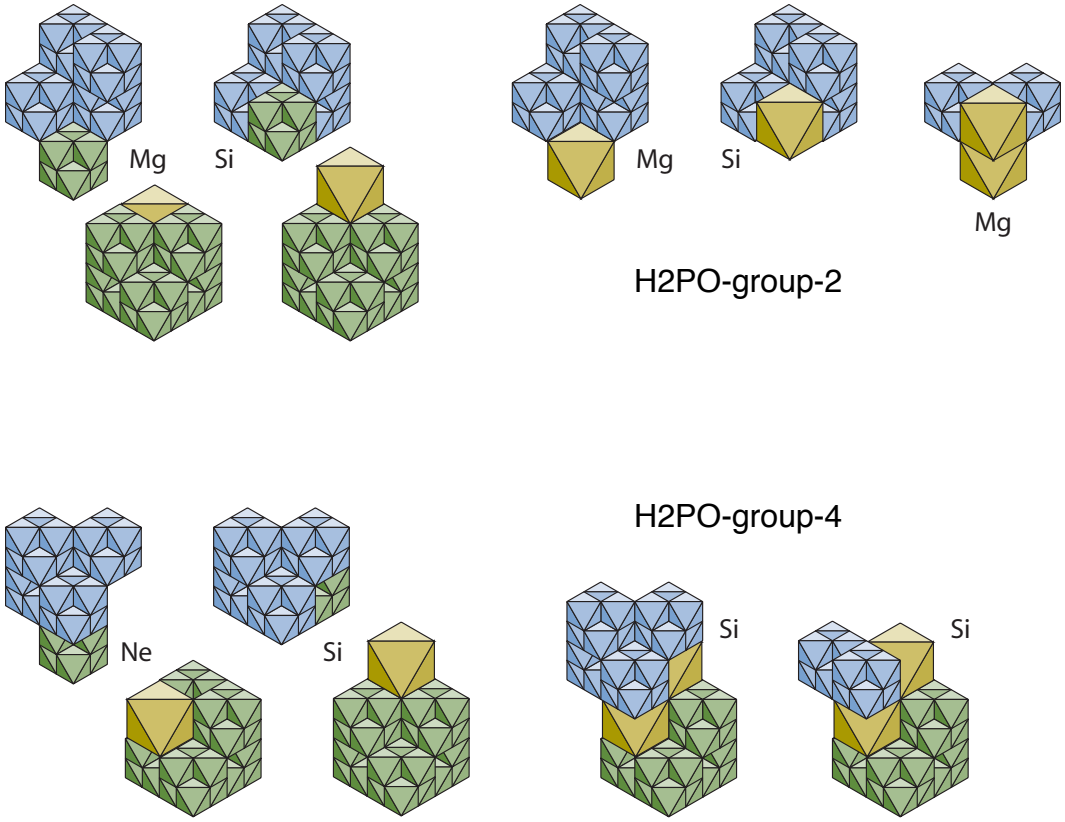

Figure 4: Cleft joins of the O-atom with the P-atom within H2PO-group-2 and H2PO-group-4.

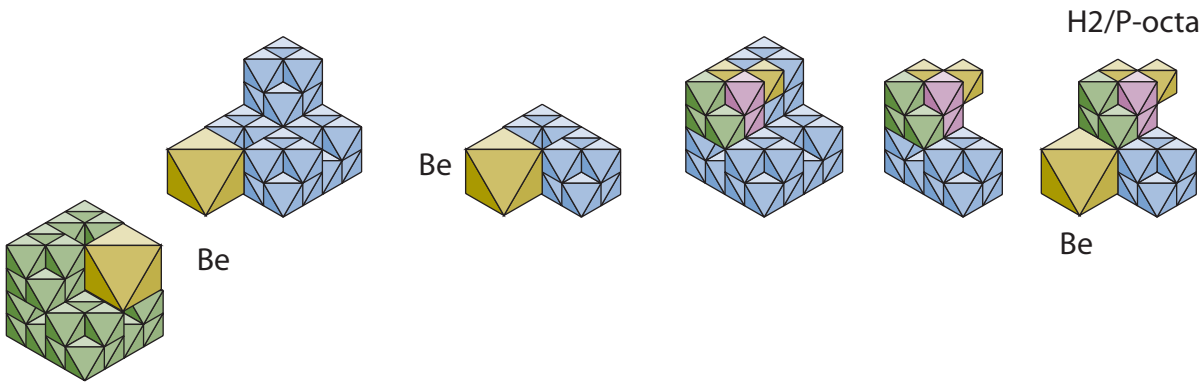

Figure 5: Cleft join of the O-atom with the P-atom within H2PO-group-1.

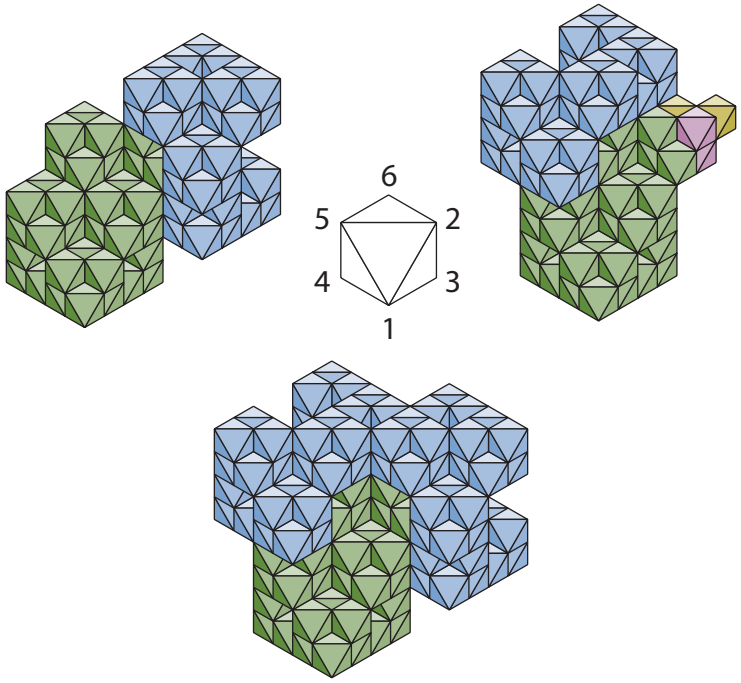

Figure 6: Placement of the O2-units on the H2P-group.

Part 2: Assembly of the H2PO4-group as viewed perpendicular to the 562-face of the P-atom

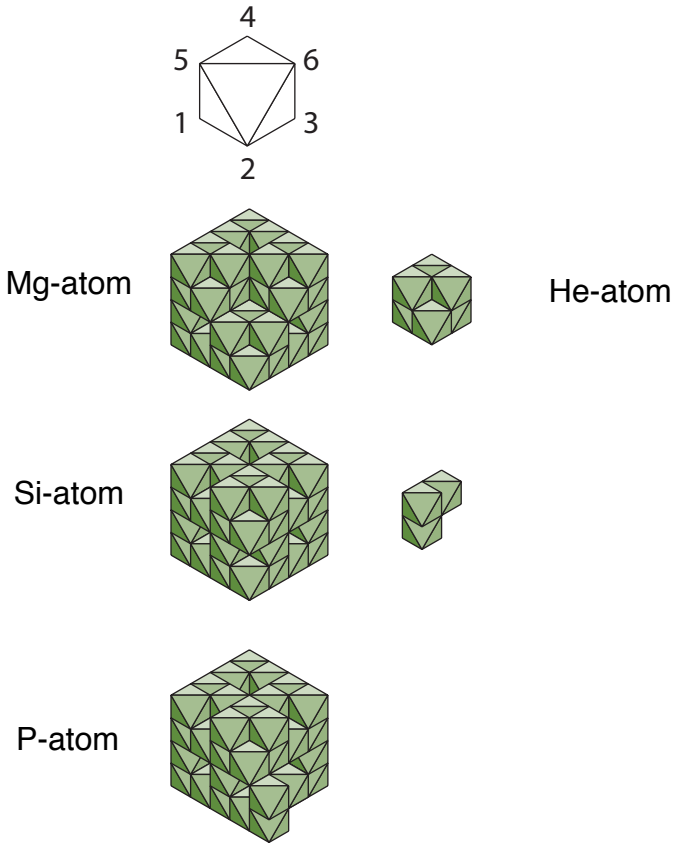

Figure 1:The P-atom

Assembly of the H2PO4-group as viewed perpendicular to the 562-face of the P-atom.

The P-atom is composed of seven He-atoms and one Deuterium atom. Six He-atoms form an octahedral assembly known as a Mg-atom. The seventh He-atom is affixed to a face of the Mg-atom to produce the Si-atom. The Deuterium-atom is affixed to the Si-octa and an octa of the Mg-atom as the P-triplet.

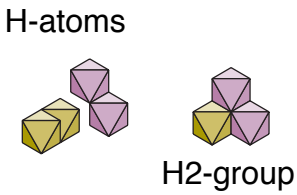

Figure 2: The H2-group

The H-atom consists of a hinged pair of epns, the fundamental particle, which is immutable and assembles with identical epns to form the atomic elements.

The H2-group consists of two H-atoms joined cleftly to form a tetrahedral assembly.

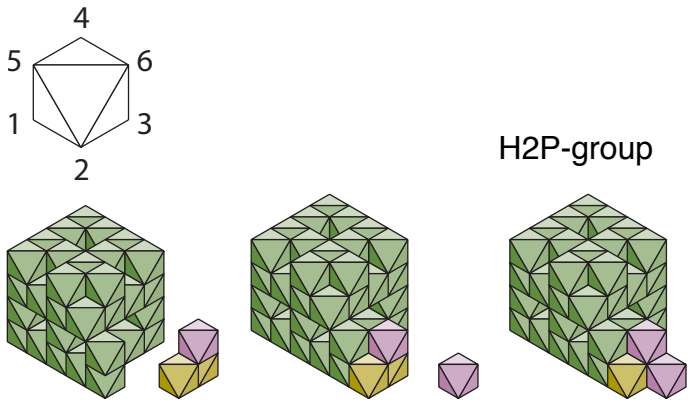

Figure 3: Assembling the H2P-group. Each of the four faces of the H2-group is a triplet comprised of two epn-faces of one H-atom and an epn-face of the other H-atom. It makes a He-join with the epn-triplet of the P-atom to form the H2P-group.

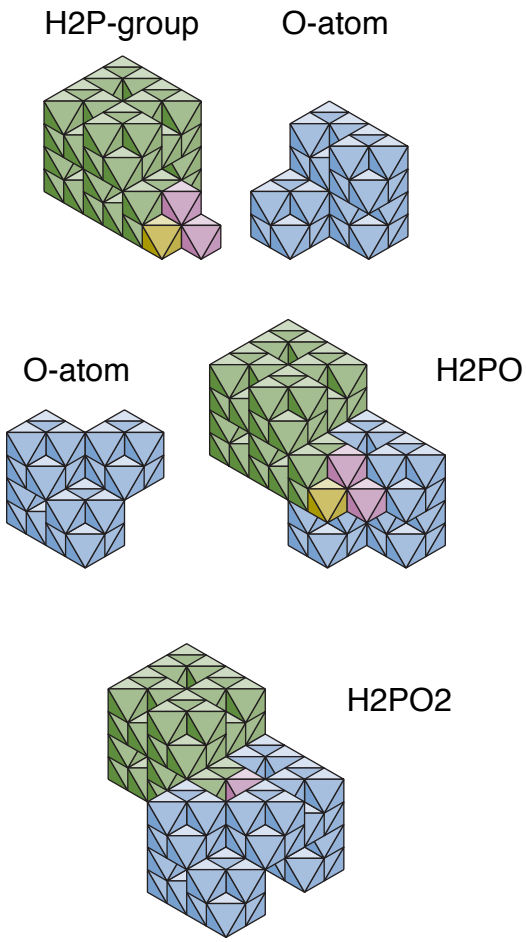

Figure 4. Attaching O-atoms to the P/H2-octa of the H2P-group.

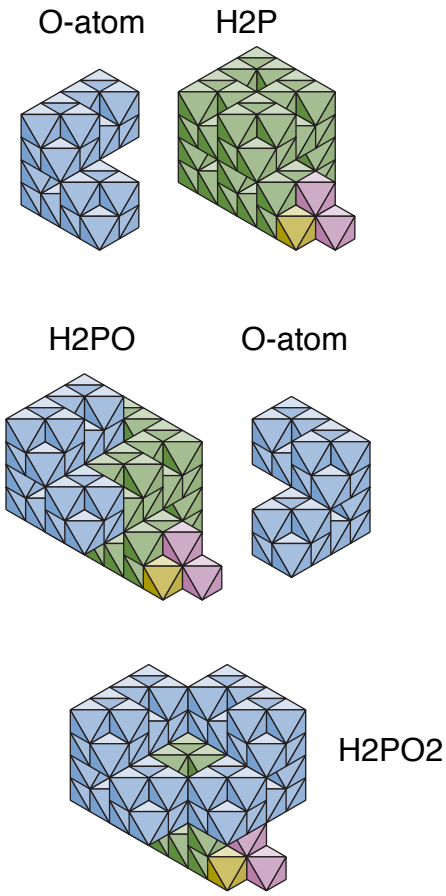

Figure 5. Attaching O-atoms to the Na/Si-octa of the P-atom.

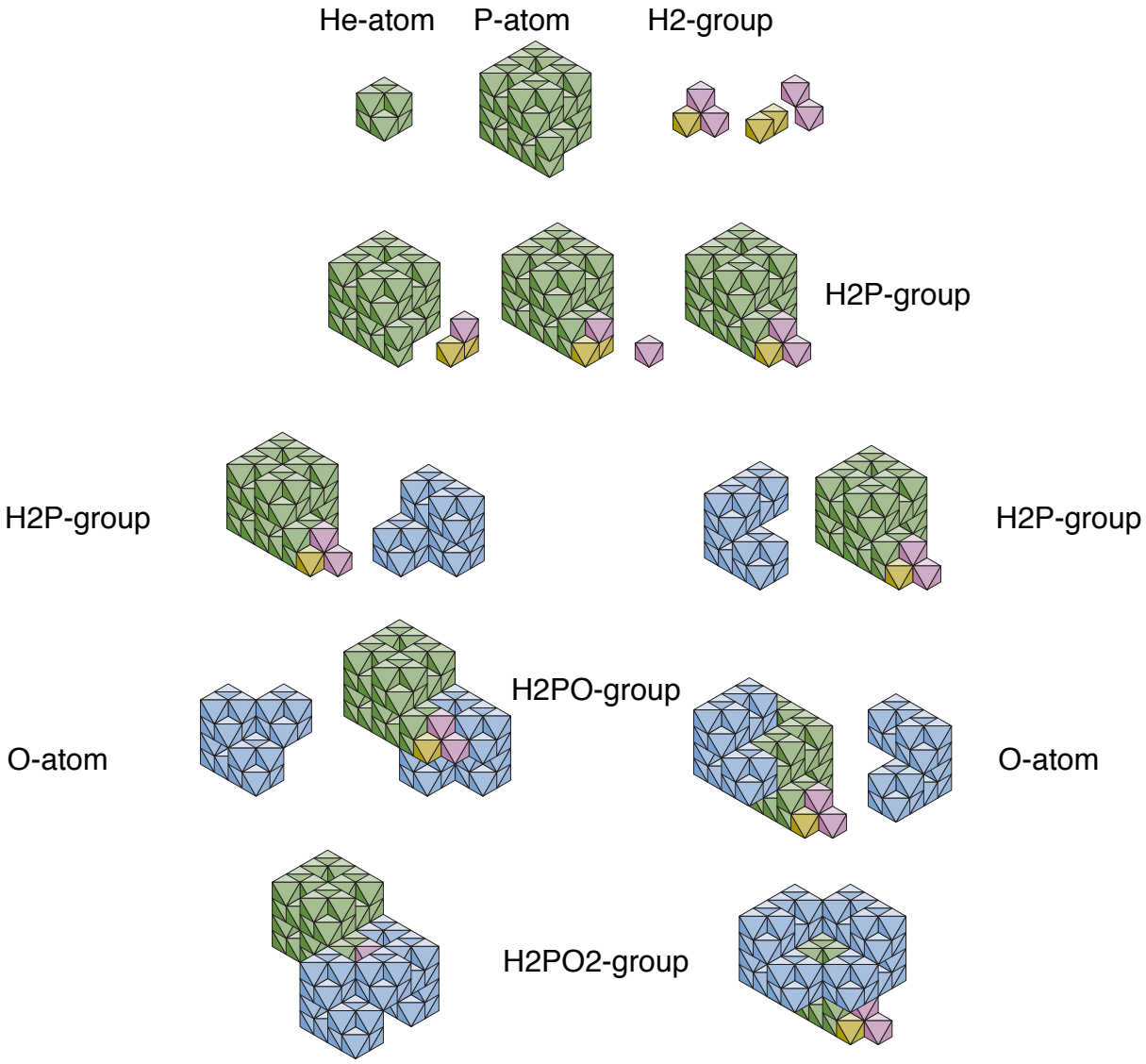

Figure 6: Steps in the assembling of the H2PO4-group

Part 3: Formation of the Mono-, Di- , and Tri-phosphate (MP, DP, TP) as viewed normal to the 562-face of the P-atom.

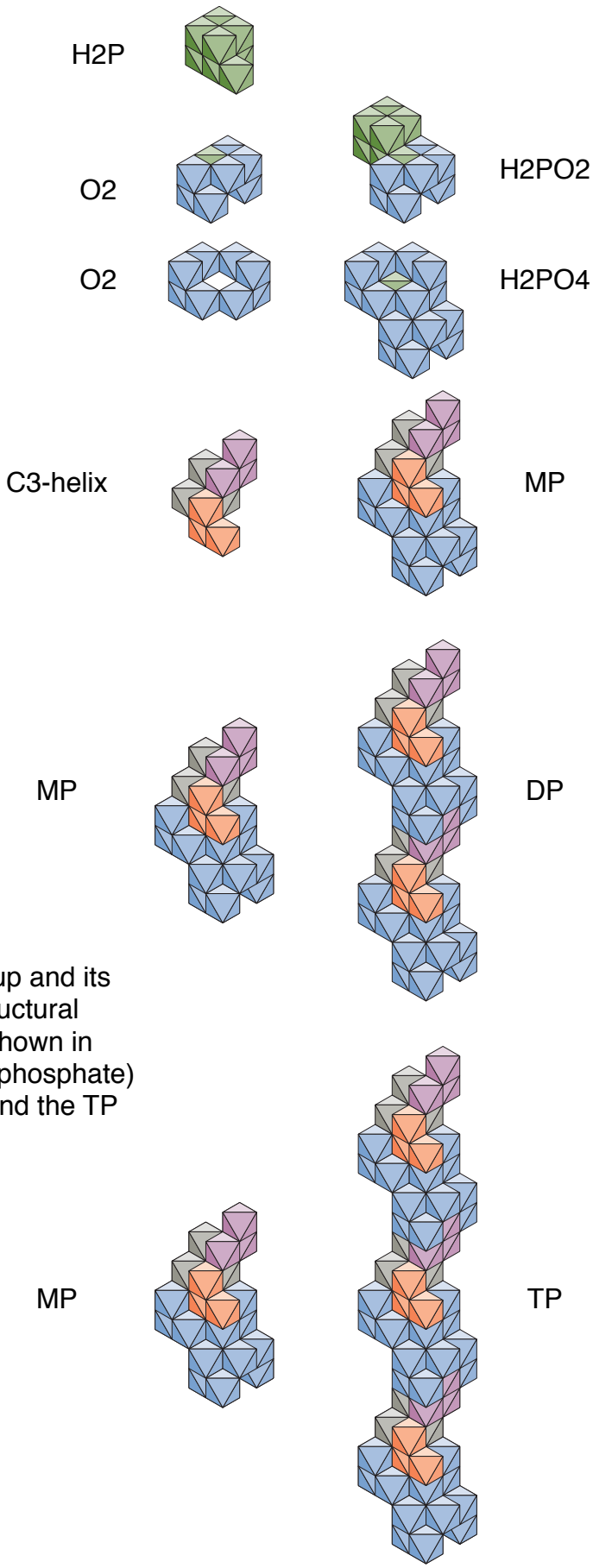

Figure 1: The assembly of the H2PO4 group and its attachment with the C3-helix which is a structural feature of D-ribose and D-deoxyribose is shown in this figure. The formation of the MP (monophosphate) and its assemblies the DP (diphosphate) and the TP (triphosphate) are also shown.

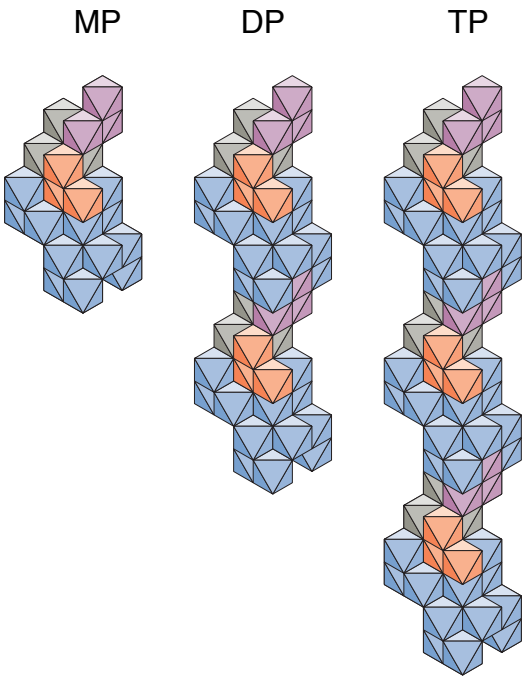

Figure 2: The mono-, di-, and tri-phosphates