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Claims

1. A process for phosphorylating a complex alcohol, comprising the steps of:
 - (a) mixing the complex alcohol and P_4O_{10} until its exothermic reaction temperature is achieved;
 - 5 (b) allowing the reaction mixture of step (a) to react until the exothermic reaction is complete;
 - (c) heating or cooling the reaction mixture of step (b) to at least 80°C; and
 - (d) hydrolysing the reaction mixture of step (c).
2. The process of claim 1 wherein the complex alcohol is a linear or branched alcohol
- 10 comprising at least 6 carbon atoms, or a cyclic complex alcohol.
3. The process of claim 2 wherein the cyclic complex alcohol is carbocyclic or heterocyclic.
4. The process of claim 2 or 3 wherein the cyclic complex alcohol is monocyclic or polycyclic.
- 15 5. The process of claim 1 wherein the complex alcohol is a chromanol.
6. The process of claim 5 wherein the chromanol is a tocopherol or tocotrienol.
7. The process of any one of claims 1-6 wherein the complex alcohol is a pharmaceutical compound, an anaesthetic, an antioxidant, or a solvent.
8. The process of any one of claims 1-7 wherein the complex alcohol is monohydroxy
- 20 or polyhydroxy.
9. The process of any one of claims 1-8 wherein step (a) further comprises heating the complex alcohol and P_4O_{10} and/or step (b) further comprises mixing and/or step (d) involves the addition of an aqueous solution.
10. The process of any one of claims 1-9 wherein the temperature of the reaction mixture
- 25 of step (b) is within the range of at least 80°C to about 160°C, within the range of at least about 90°C to 140°C, or is about 90°C, about 100°C, or about 110°C.
11. The process of any one of claims 1-10 wherein the reaction mixture of step (b) is maintained at the temperature for about 30 to about 180 minutes, about 60 to about 180 minutes, about 60 to about 120 minutes, or about 60 minutes.
- 30 12. The process of any one of claims 1-11 wherein the reaction mixture of step (c) is maintained at a hydrolysis temperature of at least 80°C, within the range of at least 80°C to about 150°C, within the range of about 85°C to 120°C, within the range of about 90°C to 110°C, within the range of about 90°C to 100°C, or within the range of about 100°C to 110°C.
- 35 13. The process of any one of claims 1-12 wherein hydrolysis is conducted for about 30 to about 180 minutes, about 30 to about 120 minutes, about 60 to about 120 minutes, about 90 to about 120 minutes, or about 60 to about 90 minutes.
14. A product obtained by the process of any one of claims 1-13.

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15. The product of claim 14 which is a phosphorylated mono-complex alcohol, a phosphorylated di-complex alcohol, or a mixture thereof.

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