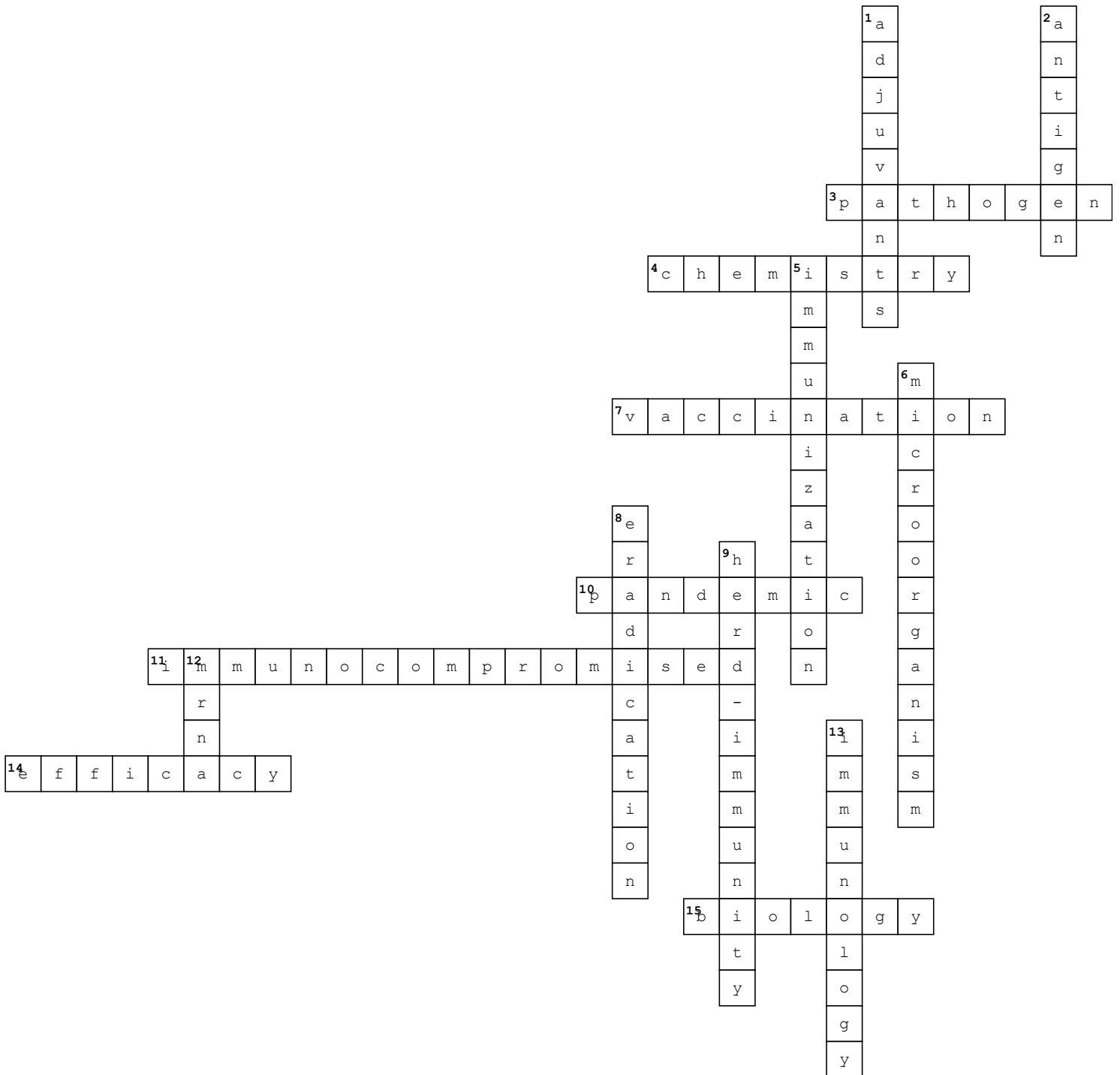


# The Science Behind Vaccines



## Across

3. A biological agent that causes disease or illness to its host, such as bacteria, viruses, fungi, or parasites.
4. The scientific discipline involved with elements and compounds composed of atoms, molecules, and ions, including their composition, structure,

## Down

1. Substances added to vaccines to enhance the immune system's response to the vaccine, thus increasing its efficacy and sometimes its shelf-life.
2. Any substance that causes the immune system to produce antibodies against it, including toxins,

properties, behavior, and the changes they undergo during a reaction with other substances.

7. The administration of a vaccine to help the immune system develop protection from a disease, often involves injecting a vaccine into the body.
10. An epidemic of an infectious disease that has spread across a large region, for instance multiple continents or worldwide, affecting a substantial number of people.
11. Having an impaired or weakened immune system, which reduces the ability to fight infections and other diseases.
14. The ability to produce a desired or intended result, often used in the context of the effectiveness of a medical treatment like vaccines.
15. The scientific study of life and living organisms, including their structure, function, growth, origin, evolution, and distribution.

bacteria, foreign blood cells, and the cells of transplanted organs.

5. The process by which an individual's immune system becomes fortified against an infectious agent, typically through vaccination.
6. A microscopic organism, such as a bacterium, virus, or fungus, which can be a single-celled or multicellular organism, often causing disease.
8. The complete destruction or elimination of something, often used in the context of completely eliminating a disease from the global population.
9. A form of indirect protection from infectious diseases that occurs when a large percentage of a population has become immune to an infection, thereby providing a measure of protection for individuals who are not immune.
12. Messenger RNA, a type of RNA that conveys genetic information from DNA to the ribosome, where they specify the amino acid sequence of the protein products of gene expression.
13. The branch of science concerned with the immune system and its responses to pathogens, including the study of immunity, vaccines, immune disorders, and how the body defends itself against disease-causing organisms.