

About the Talking Glossary of Genetic Terms

Developing the Talking Glossary

The Talking Glossary of Genetics is a learning tool developed by the National Human Genome Research Institute (NHGRI) at the National Institutes of Health (NIH). NHGRI oversaw the NIH's role in the Human Genome Project, the international research effort aimed at mapping the genes in the human body and developing tools for gene discovery.

Many of the Talking Glossary terms are commonly used today in news reports, by researchers and medical professionals, in classrooms and, increasingly, as part of daily conversation.

In this light, it is our hope this glossary will enable people without a formal scientific background to better understand the terms and concepts behind genetic research. Special attention has been paid to users who are learning or teaching genetics in the classroom. However, the Glossary is designed to be valuable for a much wider audience including patients, doctors, nurses, parents, and professionals dealing with genetic concepts and terminology, such as judges, lawyers, law enforcement officials, and others.

The process of developing the Talking Glossary began by examining some of the most popular American middle school and high school science textbooks. Genetics-related terms from these textbooks provided the foundation for the Talking Glossary. These terms are associated with biological concepts addressed by the National Science Education Standards and common in high school and college biology courses. Additional terms not found in textbooks were added to the glossary, reflecting the rapid pace of genetic research and its coverage in the media.

It is our hope that the Talking Glossary of Genetic Terms will help clarify the meaning of many genetics terms and concepts and by doing so help users gain a deeper understanding of genetic research and its applications.

Written Definitions:

Each glossary entry has a written definition that has been reviewed for clarity and accuracy by teams of science educators and genetic researchers. All of the definitions were written by the same Ph.D.-level science writer for consistency and accuracy.

Illustrations:

Most terms have professionally drawn illustrations to further explain a meaning or concept or place them in context of the cell or a similar biological setting as a means to better explain the term. All illustrations are provided by the medical illustrator/artist at the NHGRI to enable continuity and maximize re-use in learning tools such as slide shows. All illustrations are copyright free.

Each illustration can be viewed as a webpage within the glossary or downloaded as a high-quality PDF file or PowerPoint slide.

3-D Animations:

The Glossary contains more than 20 terms that are illustrated with 3-D movie animations. The animations have a non-descript musical background and are purposely not narrated. These animations may be played alone or simultaneously with the spoken definition of the term. All cellular organelles have animation sequences, as do many key terms such as gene, cell, ACGT, chromosome, etc.

Spoken Explanations of Glossary Terms:

Each term features a friendly and informative spoken explanation that can be heard on any computer with sound capabilities by clicking on the "Listen" button. Spoken explanations can also be paused at any point for user convenience.

Each speaker comments on or defines terms relevant to their personal field of study. For example, leading cancer researchers comment on cancer, genetic counselors explain genetic testing terms, and expert gene hunters tackle the many terms surrounding the search for or mapping of genes. All speakers are actively working in the field, and most work at NHGRI.

The written definition provides a reasonable definition for each term. The spoken definition is not the same as the written definition. Instead, each speaker was asked to provide information different than the written definition that would expand the listener's understanding of the term. Speakers were also asked to explain the term to the average person, not another scientist.

How to Pronounce a Term

Much of the terminology of genetics and biology is unique in its pronunciation. Below each term name is a 'Pronunciation' button. Click the button to hear the term spoken.

Information On Each Speaker:

A brief biography and photograph of each speaker accompanies terms listed in the glossary. This enables the user to examine the speaker's credentials and learn more about their research interests.

Related Terms:

If either a written or spoken definition uses other Talking Glossary terms in its text or dialogue, these terms appear in the 'Related Terms' listing at the bottom of each term page. The related terms list also includes Glossary terms that reviewers of the Glossary felt would be helpful to the user.

“Test Your Gene Knowledge”:

The Talking Glossary offers a 10-term quiz designed to be both fun and instructional. The quiz can be accessed from almost every Glossary page. Users can choose to test their knowledge about terms commonly found in K-16 science classrooms or more generally in popular news reports or conversation. The quiz randomly chooses terms from the Talking Glossary and asks the user to select a term name to match the definition shown. Hints are available for each question, and at the end of the quiz all users are able to print a Certificate of Completion that includes the date the test was taken, number of correct answers, and the user's name.

About PDF and PPT Files:

PDF (Portable Document Format) files are high-quality image files that appear and print like the original artwork. These finely detailed illustrations will download quickly and include required fonts. PDF files of Glossary illustrations can be downloaded and saved for later uses, such as overhead transparencies, school reports, or for handouts in class or at a talk or other event. Each PDF file is formatted to print on regular printer paper or standard overhead transparency. Illustrations are also downloadable as PowerPoint slides. These files can be easily copied and pasted into any existing PowerPoint presentation or can serve as a starting point for a new presentation. These slides are designed to provide lecturers with an easy-to-use and convenient source of illustrations for genetic terms and concepts.

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