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# SimTutor Module: Antibodies

Heather Gilbert
*University of North Dakota*, heather.gilbert.1@UND.edu

# SIMTUTOR – ANTIBODIES

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**Heather Gilbert, MS MLS (ASCP)[CM]**

## Introduction

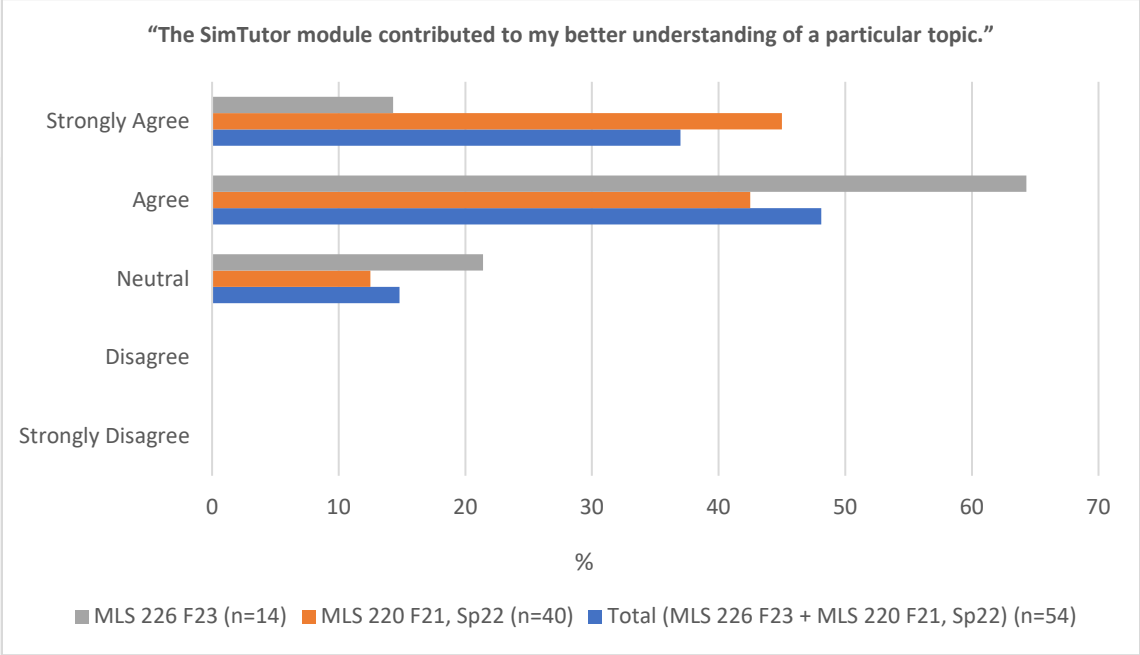
Simulation and the use of technology has had a growing impact on medical education[1], including in the field of Medical Laboratory Science[2]. One example of such technology, SimTutor software, has been implemented within the University of North Dakota's Medical Laboratory Science program. The developed simulations have proven beneficial in providing virtual opportunities for student learning and reinforcement of lecture material. The 'Antibody' simulation was developed during the Summer 2023 semester and deployed during the Fall 2023 on campus section of MLS 226: Introduction to Clinical Immunology & Molecular Diagnostics (22 students). Simulations were previously developed by the same instructor and utilized in MLS 220: Introduction to Clinical Laboratory Operations during the Fall 2021 and Spring 2022 semesters.

## Learning Objectives

1. Define antibody.
2. Differentiate between innate and adaptive immunity.
3. Differentiate between cellular and humoral immunity.
4. Describe the four pathways of antibody acquisition.
5. Identify the three functions of an antibody.
6. Identify and describe the structure of an antibody including the following components and regions: light chain, heavy chain, constant region, variable region, Fc Fragment, Fab Fragment, and hinge region.
7. List the antibody classes and their key features.
8. Differentiate between the primary and secondary immune response.

**Antibody Sim Access: HERE**

## Student Feedback




*Students were anonymously surveyed utilizing Qualtrics survey platform.*

## REFERENCES


1. Guze PA. Using technology to meet the challenges of medical education. Trans Am Clin Climatol Assoc. 2015;126:260–70.
2. Donkin R, Askew E, Stevenson H. Video feedback and e-Learning enhances laboratory skills and engagement in medical laboratory science students. BMC Med Educ. 2019 Aug 14;19(1):310. doi: 10.1186/s12909-019-1745-1.