

Lab 7: Immunology

GOALS:

- List nonspecific defenses of the human body to infection.
- Describe how T-cells and B-cells help fight infection.
- Know the difference between nonspecific and specific immune responses.
- Compare and contrast humoral immunity (B-cells) and cell-mediated immunity (T-cells).
- Describe the interaction between antigen and antibodies.
- Explain how our bodies can develop an immunity against specific diseases. and how vaccines work.
- Understand the self/non-self complex.

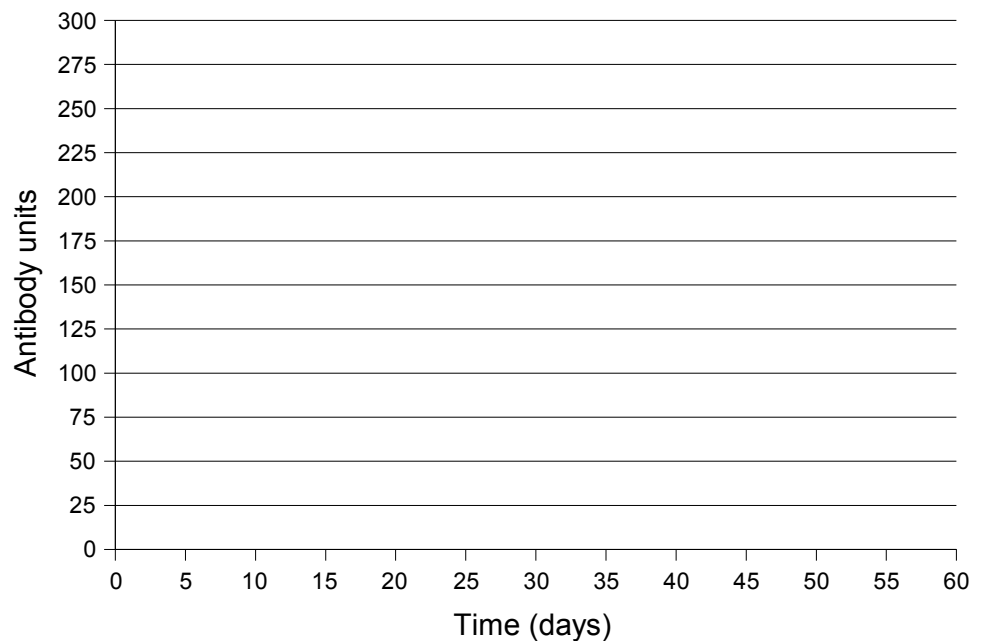
KEY TERMS:

pathogen	nonspecific defenses	macrophages	phagocytes
immune response	humoral immunity	marcrophage	complement protein
antigen	antibody	vaccination	lymphocytes
B-cell	T-cells (helper/cytotoxic)	histamine	cell immune response

1. When the human body is exposed to an antigen, the lymphocytes respond. One of these responses is to produce antibodies which will help eliminate the intruder. This first reaction to an invader is called the primary immune response and the cells that are producing the antibodies are short lived. However, a second set of cells are produced and they remember this particular antigen and can produce antibody when needed. These memory cells will respond when the body is invaded for a second or third or fourth time by the same invader. In fact these memory cells remain in the body for many years following the first invasion.

Graph the data of antibody production. You should assume that at time 0 the body was invaded by an unknown antigen. Then you can also assume that the person was exposed for a second time to the same antigen on day 40.

Time (days)	Antibody Units
0	0
4	10
8	70
12	120
16	80
20	20
24	24
28	0
32	0
36	0
40	0
44	40
48	150
52	300
56	260
60	200



*Adapted from The Science of HIV.