

# [Biomedical science - lab report example](https://assignbuster.com/biomedical-science-lab-report-example/)

## Biomedical Science

A Tetanus Toxoid T lymphocyte Proliferation Assay College: Tetanus Toxoid (TT) µg/ml count (cpm) count (cpm) count (cpm) Average count (cpm)   
count (cpm) in log   
No antigen   
2217   
1686   
1849   
1917   
3. 28   
TT 0. 01   
10504   
10867   
11117   
10829   
4   
TT 0. 1   
32265   
29135   
37944   
33115   
4. 5   
TT 1   
94541   
102169   
96627   
97779   
5   
TT 10   
126790   
123237   
118140   
122722   
5. 1   
TT 100   
125785   
128434   
121327   
125182   
5. 1   
3. 1   
Ovalbumin   
1678   
1267   
1128   
1358   
(100 mg/ml)   
Table 1. Count of PBMC’s in logs and the toxoids conc in Ug/ml   
Figure 1. Graphical presentation of the data cpm against the Tetanus toxoids (log scale)   
a). Which concentration of TT gave maximum T cell proliferation?   
10 µg/ml   
b). Which APC are present in the PBMC?   
Dendritic Cells   
B cells   
Monocytes   
Macrophages   
  
c) Why was ovalbumin used in this experiment?   
Since it is a T-cell dependent antigen it was used as a protein model to study antigen specific immune response in the mice. It was also used because it is inert and non-specific hence doesn’t cause harm to the mouse even after the immune response is not induced.   
d). Discuss the results obtained.   
Basing on the graph above, it is clearly evident that the toxoids induced the immune response. When the concentration of the toxoids was increased so does the PBMC’s. The maximum amount of the toxoids that is able to induce the immune response is 100ug/ml and at this point the maximum immune cells that are generated from this are about 122722cpm. The proliferation of Antigen-specific T-cell normally employed as an assay for the responses of T-cell (Zhang et al, 1998). Humans or mice T cells immunised with a given antigen. For instance, in this case tetanus toxoids, they have a capacity of proliferating after being exposed to the antigen presenting cells as well as tetanus toxoids but this can’t be from the antigens related to it that had not been immunized. The measurement of proliferation can be done by incorporating of 3H-thymidine into the actively dividing cells DNA (Ehl et al, 1997). The proliferation of antigen-specific is a specific CD4 T cell immunity hallmark (Tough et al, 1996).   
Bibliography   
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