SOD1 function, biomedical relevance and role in ALS

Your report should be at least 10 pages long (not including figures) in Arial 12, 1.5 lines spacing and 1” margins. Your laboratory report should include the following sections:- Title- Abstract- Background: provide an in-depth review of (1) SOD1 function and role in the cell, (2) SOD1 biomedical relevance and role in ALS, (3) ALS disease pathology and (4) model systems for ALS research. Cite the proper literature to support the background information. Include only peer-reviewed publications and prefer original research articles to reviews.- Methods/Results: include the description of the experiments discussed during the second half of the semester. These experiments include the creation of a yeast model expressing the G85R SOD1 variant (site-directed mutagenesis PCR, E. coli transformation, plasmid extraction and screening) and the analysis of yeast cells expressing the G85R SOD1 variant (SOD1 protein level and enzymatic activity, cell resistance to oxidative stress and lifespan). For each approach, describe the principles and key steps in the protocol. For each experiment, state the question/hypothesis the experiment was designed to answer, and the results obtained. In blackboard (“final lab report” folder), it is available a selection of the result figures we worked with during the semester.- Conclusion/Future directions: suggest open questions/experiments for future research work.- References: include a list in alphabetic order of the publications cited in the background section. Each reference should include author names, title, journal name, volume and pages, year of publication. Include only peer-reviewed publications and prefer original research articles to reviews. To search for available literature on the subject of interest it is recommendable to use the US National Library of Medicine at NIH: https://www.ncbi.nlm.nih.gov/pubmedSee in blackboard the “Writing a scientific paper” file for more information. I will evaluate your work based on the following principles: Evaluation questionnaire for the lab report (10 points per question)- Is the biological relevance of SOD1 (SOD1 enzymatic properties/function/role in the cell) explained in the background section?- Is the biomedical relevance of SOD1 (its role in ALS) explained in the background section?- Additionally, does the background section includes a brief review of the model systems used in ALS research?-Does the background section describe the main features of ALS (ALS symptoms/pathology/genetics)?. the question/problem to be investigated clearly stated?. Is the purpose of each experiment clearly stated?- Is the interpretation of each experiment correct?. Are the principles and key steps of the methods used described in a clear and concise manner?. Does the conclusion include suggestions for questions/experiments for future research direction?. Is a proper list of references included (the reviews provided to you in blackboard do not count)?