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REVIEWER'S REPORT

Manuscript No.: IJAR-59042

Title: Protective effect of phytochemical constituents on oxidative & non oxidative DNA damage induced by H2O2 & aspirin.

Recommendation:

Accept as it is .....

Accept after minor revision.....

Accept after major revision ...✓.....

Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality			✓	
Clarity			✓	
Significance		✓		

Reviewer's ID: JPR-200

Reviewer's Comment for Publication

The manuscript investigates the protective effects of extracts from ten plant sources against DNA damage induced by hydrogen peroxide (H_2O_2) and aspirin. The topic is relevant because oxidative stress and DNA damage are important areas of biological and pharmacological research, and the investigation of plant-derived protective agents has potential significance.

The manuscript presents interesting preliminary observations, particularly the reported protective effects of *Oryza sativa*, *Lablab purpureus*, *Ocimum sativum*, and *Eucalyptus* against H_2O_2-induced DNA damage. However, several points require clarification and correction before publication.

1. **The terminology "phytochemical constituents" should be reconsidered.** The study appears to use aqueous extracts/preparations of plant materials rather than purified phytochemical constituents. The authors should clearly describe whether whole plant extracts, leaves, seeds, or specific phytochemicals were used and provide sufficient details regarding the source and preparation of each sample.
2. **The experimental methodology requires greater detail.** Information regarding the amount and quality of isolated DNA, number of experimental replicates, controls, incubation conditions, and method used to quantify DNA damage should be clearly stated. Appropriate untreated DNA and treatment controls should be identified.
3. **The method of assessing DNA damage using absorbance at 260 nm needs clarification.** A change in A260 alone may not be sufficient to establish DNA strand damage or protection. The authors should explain the rationale for using this measurement and, if available, provide supporting agarose-gel electrophoresis results and/or densitometric analysis.
4. **The H_2O_2 concentration calculations should be carefully checked.** The manuscript reports 0.44 M, 1.32 M, and 2.2 M for 5%, 15%, and 25% H_2O_2, respectively. The calculation and dilution procedure should be presented clearly and corrected if necessary, including whether the percentages refer to v/v, w/v, or w/w concentrations.
5. **The preparation of aspirin solution should be clarified.** The authors should provide information on the solubility and preparation of the reported 1% aspirin solution in distilled water, as well as the rationale for selecting this concentration.

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6. **Appropriate statistical analysis is not described.** The manuscript should state the number of independent experiments and statistical methods used to evaluate differences between treatments. Mean values, variability (e.g., SD/SEM), and statistical significance should be reported where applicable.
7. **The tables and graphs require improvement.** Several numerical values in the tables are difficult to interpret, including negative values and repeated values of "10." The authors should explain what these values represent, provide units, and ensure that all tables and figures are complete, legible, and correctly labelled.
8. **There are inconsistencies between the Results, tables, and text.** For example, different phytochemicals are mentioned in the text and table titles, and some statements concerning protection at different exposure times are difficult to reconcile with the presented numerical data. These discrepancies should be carefully checked throughout the manuscript.
9. **The discussion should distinguish between observed results and proposed mechanisms.** Statements concerning DNA reannealing, DNA aggregation, and mechanisms of protection should either be supported by appropriate references or presented more cautiously as possible explanations.
10. **The manuscript requires language and formatting revision.** There are numerous grammatical errors, missing spaces, inconsistent use of species names, inconsistent terminology, and typographical errors. Scientific names should be italicized consistently, and terms such as "non-steroidal anti-inflammatory," "oxidative DNA damage," and "phytochemical" should be standardized throughout.
11. **The reference section should be checked carefully.** References should follow the journal's prescribed format, and all cited studies should be accurately represented in the manuscript. The authors should also ensure that each reference is directly relevant to the statement for which it is cited.
12. **The conclusion should be revised to accurately reflect the findings.** The authors should avoid making broad claims about DNA protection until the experimental limitations and quantitative evidence are clearly established. The potential protective activity of the identified plant extracts can be presented as a preliminary finding requiring further validation.

Overall, the manuscript addresses a relevant and potentially useful research question and provides preliminary evidence for protective effects of selected plant-derived preparations against chemically induced DNA damage. However, clarification of the methodology, correction of calculations and inconsistencies, improvement of data presentation, inclusion of appropriate statistical information, and substantial language editing are recommended.

Recommendation: Accept after minor revision.