

Declaration on the Use of Artificial Intelligence

We, Laiane Carvalho, Eudes Rocha, and Emília Rabani, hereby declare that:

Use of Artificial Intelligence Tools:

During the development of this work, the following artificial intelligence tools were used:

Tools: ChatGPT, Perplexity, NotebookLM.

Purpose(s):

- Language revision: improvement of grammar, spelling, clarity, and writing style.
- Translation: conversion of the manuscript or parts of it into another language.
- Text generation: creation of drafts, suggestions, or specific sections of the content, duly reviewed by the authors.
- Data analysis: initial processing and interpretation of datasets.
- Data or image visualization: assistance in the generation or enhancement of figures, graphs, or illustrations.
- Methodological suggestions: provision of recommendations or ideas to improve research approaches.

Human Authorship and Supervision:

The use of artificial intelligence tools was solely for the purposes described above. All supervision, validation, and intellectual authorship of the manuscript are the responsibility of the human authors.

Compliance with Ethical Principles:

The use of AI tools followed ethical practices and did not include activities such as data fabrication, plagiarism, image manipulation, or any practice that could compromise scientific integrity.

Transparency:

We declare that the information above is complete and accurate. Should any inconsistency or improper use be identified, we agree that the manuscript may be investigated and, if necessary, that the error be formally reported.

Signature of the Principal Corresponding Author:

Date: 04/02/2026