JKAN Author Roles/Responsibilities

1. Conceptualization or/and Methodology
   - Ideas: formulation or evolution of overarching research goals and aims.
   - Development or design of methodology: creation of models.

2. Data curation or/and Analysis
   - Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and late re-use.
   - Application of statistical, mathematical, computational, or other formal techniques to analyse or synthesize study data.

3. Funding acquisition
   - Acquisition of the financial support for the project leading to this publication.

4. Investigation
   - Conducting a research and investigation process, specifically performing the experiments, or data/ evidence collection.

5. Project administration or/and Supervision
   - Management and coordination responsibility for the research activity planning and execution.
   - Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.

6. Resources or/and Software
   - Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.
   - Programming, software development: designing computer programs: implementation of the computer code and supporting algorithms: testing of existing code components.

7. Validation
   Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.
8. Visualization
• Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.

9. Writing: original draft or/and review & editing
• Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).
• Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.