

PEER-REVIEW REPORT

Name of journal: World Journal of Gastrointestinal Oncology

Manuscript NO: 58633

Title: Highly accurate colorectal cancer prediction model based on Raman spectroscopy using patient serum

Reviewer's code: 04965020

Position: Editorial Board

Academic degree: FRCS (Gen Surg), MBBS

Professional title: Assistant Professor

Reviewer's Country/Territory: Singapore

Author's Country/Territory: Japan

Manuscript submission date: 2020-07-31

Reviewer chosen by: Ya-Juan Ma

Reviewer accepted review: 2020-08-25 00:41

Reviewer performed review: 2020-08-30 03:12

Review time: 5 Days and 2 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input type="checkbox"/> Anonymous <input checked="" type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



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SPECIFIC COMMENTS TO AUTHORS

Thanks for the interesting read. 1. Title. The title is clear. 2 Abstract. The abstract is concise. 3 Key words. Yes 4 Background. The background clearly describes use of Raman and its potential benefits. 5 Methods. The method is appropriate. In terms of the analysis for the AI and boosted tree model, the model seems to over-estimate the accuracy. How is the validation of the prediction model answered? Is there another database to ensure reproducibility of such results? 6 Results. As above. 7 Discussion. Overall, I find the manuscript easy to understand and well very thought through. The main concern is in the validity of the AI model and the validity as described above. 8 Illustrations and tables are appropriate. 9 Biostatistic analysis of significance is appropriate. 10 Units. Appropriate use.

PEER-REVIEW REPORT

Name of journal: World Journal of Gastrointestinal Oncology

Manuscript NO: 58633

Title: Highly accurate colorectal cancer prediction model based on Raman spectroscopy using patient serum

Reviewer's code: 02544757

Position: Editorial Board

Academic degree: MD, PhD

Professional title: Professor

Reviewer's Country/Territory: Taiwan

Author's Country/Territory: Japan

Manuscript submission date: 2020-07-31

Reviewer chosen by: Ya-Juan Ma

Reviewer accepted review: 2020-08-24 04:55

Reviewer performed review: 2020-09-02 14:49

Review time: 9 Days and 9 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

In this article, Ito et al used Raman spectra to assess the collected serum samples from 184 patients who underwent colonoscopies, in whom colorectal adenomas patients and patients with no specific findings were the most populations. The authors showed that the generalised R2 values by Raman spectra for colorectal cancer, adenomas, hyperplastic polyps, and neuroendocrine tumours were 0.9982, 0.9630, 0.9962, and 0.9986, respectively. The authors concluded that Raman spectroscopy technology can help physicians in early detection of colorectal cancer patients. Although this article is interesting, there are some issues should be improved. Major issues 1. In the abstract section, more clear information of study population and detailed brief results should be provided in the methods and in the results subsection. 2. In the Introduction section, the more information of “Raman spectroscopy is useful in the diagnosis of colorectal[14]” should be described. 3. In the methods section and in the results section, the 12 cases of patients with colorectal cancer were heterogeneous, ranged from stage I and IV. As mentioned by authors in the Discussion section, the rare cases of colorectal cancer may interfere with the conclusion of this study. In addition, the results assessed by Raman spectroscopy may be quietly different between patients with stage I and patients with stage IV. Taken together, aforementioned factors may result the bias and these results obtained from these patients may be cautious. Because number of colorectal cancer patients were less than patients with adenoma and heterogeneous populations of colorectal cancer patients were exhibited, the enrollment of more stage I colorectal cancer patients to further compare the data analysed by Raman spectroscopy with patients with colon adenoma, and patients with polyp are suggested.