

ESPS Peer-review Report**Name of Journal:** World Journal of Gastroenterology**ESPS Manuscript NO:** 10774**Title:** Motility patterns of ex vivo intestine segments depend on perfusion mode**Reviewer code:** 00227582**Science editor:** Ya-Juan Ma**Date sent for review:** 2014-04-19 17:57**Date reviewed:** 2014-04-27 01:22

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A (Excellent)	<input checked="" type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B (Very good)	<input type="checkbox"/> Grade B: minor language polishing	<input type="checkbox"/> Existed	<input type="checkbox"/> High priority for publication
<input checked="" type="checkbox"/> Grade C (Good)	<input type="checkbox"/> Grade C: a great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D (Fair)		BPG Search:	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E (Poor)	<input type="checkbox"/> Grade D: rejected	<input type="checkbox"/> Existed	<input type="checkbox"/> Major revision
		<input type="checkbox"/> No records	

COMMENTS TO AUTHORS

Motility patterns of ex vivo intestine segments depend on perfusion mode General Comments In this investigation the authors study gastrointestinal motility in a rat model. They determine the effects of different perfusion pressures and perfusion substances on gastrointestinal motility and patterns of motility. They used videos of gastrointestinal motility and fiducial points to generate colorized maps. They also determined gastrointestinal tissue quality. Motility patterns were distinguished in the colorized maps based on perfusion level and type. The authors conclude that motility experiments should be performed under standardized conditions, both for reproducibility and so that valid comparisons can be made between experiments. This study is of interest since motility is an important indicator of gastrointestinal function. Furthermore, it is of potential importance since there is currently no standard method for characterization of motility. The authors provide colorized maps as a way to standardize motility characterization. This is primarily a qualitative not a quantitative study. There is no quantification of the colorized maps and no statistical comparisons provided. Therefore the conclusions that are made, i.e., that perfusion pressure and characteristics affect gastrointestinal motility and its pattern, are from a qualitative perspective. I have a few queries. There is little given in the way of description of the colorized mapping process. I would like to see an improved description. There is little description of the software used to measure motility, which is then converted to a color for the map. I would like to know in detail how this is done, perhaps using a diagram. Are fiducial points on the gastrointestinal surface and the motion of these points analyzed? If so, how are the fiducials selected? Are these some sort of landmarks? Are they virtual? Or are actual markers affixed to the intestine? There are no tables of quantitative

results nor statistical comparisons provided. Is this why the conclusions are somewhat limited? I was expecting something might be said about the use of differing perfusion substances and pressures.

Specific Comments P 4-27 'Due to the fact that motility measurement and characterization of motility pattern in the ex vivo system offers a much better feasibility compared to in vivo measurements longer ex vivo times are desirable.' Please rephrase, don't really understand this. P 12-27 I don't really understand MP3. Need to show a figure or characterize better the oral-anal and anal-oral waves. When are such waves oral-anal and when are they anal-oral? When do other waves get interspersed? How is it determined when the waves are oral-anal and when they are anal-oral? Can we see example of each? How do these relate to the colorized maps? 'The stronger the luminal diameter of the intestine decreases at a certain ...' Not sure if stronger is correct, maybe greater or sharper. P 13-27 I don't really understand Figure 4. Need a better description of all the details. What are the units of scale? How are these values computed? Why is nothing below a level of about 60 units observable in the colorized maps? P 15-27 Figure 5 - Are these pie charts the averages for many rats? How many rats? What was the standard deviation? Is there statistical significance between the means for the various solution contents shown? P 17-27 Figure 6 - Are there statistically significant differences? P 18 - 27 What is 'superior tissue quality'? 'Mucosa damage was strongly decreased ...' How was this measured quantitatively? P 22 - 27 'Long-term perfusion with Tyrode usually causes tissue damage.' What damage? How? P 23 - 27 'Conditions that influence motility can be identified.' But statistics are not used to show this, it is qualitative. Quantitative as well as qualitative changes in motility 'patterns can be evaluated

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Title: Motility patterns of ex vivo intestine segments depend on perfusion mode

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CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A (Excellent)	<input checked="" type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input type="checkbox"/> Accept
<input checked="" type="checkbox"/> Grade B (Very good)	<input type="checkbox"/> Grade B: minor language polishing	<input type="checkbox"/> Existed	<input type="checkbox"/> High priority for publication
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		<input type="checkbox"/> No records	

COMMENTS TO AUTHORS

This paper describes a new method to visualize the different types of intestinal contractions and compares the effect of different media to perfuse and store the intestinal segments. This is a valuable work to improve the study of intestinal motility ex vivo; however, I consider that this paper should be improved at several points shown below. **ABSTRACT:** The results section does not show the effect of the different media in the rate of motility patterns. A brief description should be given. The final conclusion of the abstract is too general and obvious. A more specific statement according to the results obtained should be more appropriate. **MATERIALS AND METHODS:** At the end of the "Motility data interpretation" section, authors stated "For every given dot pair (x-axis) at every given time (y-axis)..." However, in figure 4 it is the opposite: the x-axis is the "time (min)" and the y-axis is "measuring points". **RESULTS:** The present paper describes a non-conventional technique to record and analyse the intestinal motility. A more extensive description of the interpretation of the heatmaps showed in Figure 4 would makes easier to the reader to identify the motility patterns that can be observed. In the legend of this figure 4 it is necessary to state which "measuring point" (y-axis) is in the more oral position: "0" or "32" Authors present this technique as a pharmacological model to test drugs acting on gastrointestinal motility. I was surprised that authors have not tested any commonly used contractile agent such as acetylcholine or KCl in order to show its response in this model to be compared with other methods from other papers. Authors conclude that "Mucosa damage was strongly decreased using AQIX as storage and perfusion medium", but they do not describe the morphological changes observed in the histological study after storage and perfusion with the different media. **FIGURE 5:** This figure only shows trends to increase or decrease each type of



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motility pattern depending on the different media used in this study. Why authors have not carried out a statistical analysis to show whether these differences among media could be considered statistically significant? The same can be applied to Figure 6 with the different pressures. How many data (n) are plotted in each histogram? Standard errors of the means (SEM) are absent, so it is difficult to determine the relevance of the results in absence of statistical significance. DISCUSSION: If the method described in this paper is compared to that published by Bernard, a brief explanation of the Bernard's method would help the reader to follow the discussion. Authors state: "We found that different media compositions similar to food composition in vitro affected the quantity of the motility patterns observed". However the different nutritional compositions of the three media used are not given in the Materials and Methods section. Furthermore, the differences in the motility patterns obtained with the three media are not discussed according to these different nutritional compositions.

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<input type="checkbox"/> Grade A (Excellent)	<input checked="" type="checkbox"/> Grade A: Priority Publishing	Google Search:	<input checked="" type="checkbox"/> Accept
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COMMENTS TO AUTHORS

Title: Motility patterns of ex vivo intestine segments depend on perfusion mode The paper by Schreiber is interesting and is well written.