Reviewer’s report

Title: Studies on prokinetic, laxative and spasmodic effects of Fumaria parviflora of Arabic origin with species and tissue-specificity

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Reviewer: M. Nabeel Ghayur

Reviewer’s report:

Najeeb-ur-Rehman et al. present some interesting findings on the laxative and gastrointestinal motility enhancing effects of crude extract of Fumaria Parviflora (Fp.Cr). The pharmacological finding that Fp.Cr shows laxative effect in-vivo and in-vitro does not only match to its traditional use as a laxative agent, but the authors have interestingly shown how the extract shows tissue and species specificity in the many in-vitro tissue preparations used to determine the mechanism of stimulatory effect of the extract. The methodology used is adequate while the analysis and interpretation is also up to the mark, but before accepted, the Reviewer has some concerns that need to be addressed:

Major concerns:

1. The author have shown tissue and specie selectivity of the extract for its in-vitro stimulant effect. There is another specificity it the results as shown by the authors. Can the authors explain why the extract effect was only partially blocked by atropine in the mice in-vivo tests of laxative activity and charcoal meal transit, while the effect of extract was completely blocked in mice in-vitro by atropine? This shows difference of results even at the ‘in-vitro’ vs. ‘in-vivo’ level. Please add and discuss this point in the Discussion.

2. The authors have shown that the extract possesses some alkaloids in it. Alkaloids have been shown to have gut stimulant effect. Please add this point in the discussion.

3. In Figure 2, a graph for the effect of Fp.Cr on rabbit ileum is not provided. Although the extract showed no effect on rabbit ileum, it would be good to include a graph here, by even using a flat line, to show that the extract was devoid of any effect. It will provide the readers with a complete view of the activity of the extract.

Minor concerns:

1. Abstract, Methods, line 2: change “were suspended in tissue bath” to “were separately suspended in tissue baths”

2. Abstract, Results, line 3: change “activities in mice” to “activities in-vivo in mice”

3. Abstract, Results, line 3: change “In isolated gut preparations of mouse and
rabbit” to “In isolated gut preparations of mouse (jejunum and ileum) and rabbit (jejunum and ileum)"

4. Kindly clearly add in the ‘Abstract’ (in ‘Results’ sub-section) that ‘Fp.Cr was devoid of any effect in rabbit ileum’.

5. Background, paragraph 2, line 7: change “we showed first time that the Fumaria” to “we showed for the first time that Fumaria”

6. Methods, Extraction procedure, line 3: change “NO.1” to “No.1”

7. Methods, Extraction procedure, line 5: change “under a reduced pressure to obtain finally, the crude extract of the aerial” to “under reduced pressure to finally obtain crude extract of aerial”

8. Methods, Extraction procedure, line 7: change “wt/wt” to “w/w”

9. Methods, In-vitro experiments, last line: change “ranged” to ranging”

10. Results, Effect of Fp.Cr on ileum preparation of different animals, line 1: delete “In mouse ileum” as you have also used this phrase in the line #2

11. The abbreviation for “crude extract of Fumaria parviflora” as “Fp.Cr” was first described by the authors in ‘Extraction Procedure’ section of the paper. Throughout the later parts of the paper, wherever the authors have used the phrase (or a similar phrase) “crude extract of Fumaria parviflora” again, please change that with the abbreviation “Fp.Cr”. This will save space and will give more consistency to the text.

12. Similarly to the above point, the authors have described the abbreviation of “Acetylcholine” and “Carbachol” as “ACh” and “CCh”, respectively, in the ‘Chemicals’” section. Next they have done this again in the ‘Charcoal meal gut transit test’ and in the ‘In-vitro experiments’ sections; please do this only once. Also, in the later text throughout the paper, use only the abbreviation ‘ACh’ and ‘CCh’ and not the whole word. This will give more homogeneity to the text.

13. Results, In-vitro findings, Effect of Fp.Cr on jejunum preparation of different animals, line 2: where it says “being less potent than in mouse ileum”, please give the attesting statistics or a ‘p’ value to prove this point.

14. Discussion, paragraph 2, line 10: change “[14], and ispaghula” to “[14], ispaghula”

15. Discussion, paragraph 4, line 6: change “both rabbit and mouse” to “both rabbit jejunum and mouse”

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the
statistics.

Declaration of competing interests:
I declare that I have no competing interests