Response to Reviewer 2 Comments

We would like to express our sincere thanks to the reviewers who identified areas of our manuscript that needed corrections/formations/ modifications. We have responded to the reviewer's comments point by point

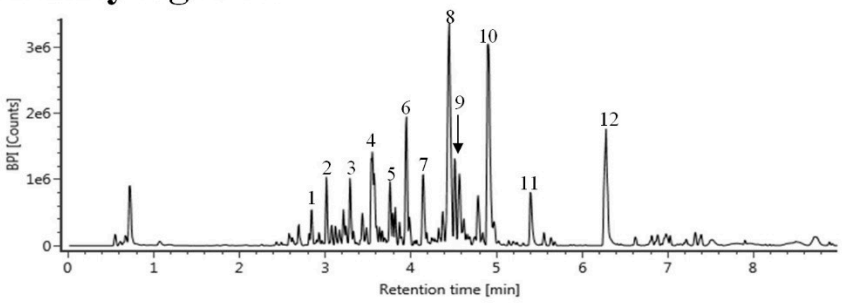
1. Please provide the qualitative and nutrient composition of the substance. biologically active in the studied Fallopia japonica

Response: Thank you for the comment. We have performed the analysis of the Fallopia japonica extract (FJE) and found that key biological compounds like resveratrol, emodin-glucoside 1, emodin glucoside 2, procyanidin, and other polyphenols. The ultra-performance liquid chromatography (UPLC) observations are attached as supplementary observation. We hope that these observations provide a strong indication of its positive impact. The UPLC observations indicate that FJE has a significant amount of biologically active compounds like resveratrol, emodin-glucoside 1, emodin glucoside 2, procyanidin, and other polyphenols. These compounds suppress inflammation by inhibiting leukocyte movement and preventing β-cell destruction. Also, procyanidins assist in the prevention of airway inflammation. The updated text in the revised manuscript is as follows,

"Moreover, all these positive implications of FJE can be attributed to the presence of EMODIN glucoside 1, EMODIN glucoside 2, procyanidin, and other polyphenols. The UPLC data indicate that FJE contains a substantial quantity of these biologically active compounds (Fig S1). These compounds are known to suppress inflammation by inhibiting leukocyte movement and preventing β-cell destruction and alleviating airway inflammation [1-4]. Besides, procyanidins assist in the prevention of airway inflammation [5-7]. Together, Resveratrol's potent anti-inflammatory and antioxidant properties and EMODIN's anti-inflammatory properties help to reduce airway inflammation. In addition, Procyanidin's potential to improve vascular health indirectly contributes to optimal oxygen transport and minimizing inflammation-associated damage [8-10]. Hence, the presence of these biologically active compounds positively influences multiple signaling pathways and regulates airway inflammation-associated disorders."

UPLC observations as follows in figure S2

Supplementary figure 2



No.	RT	Compounds	Obserbed mass [M-H]	Mass error	Mass fragment
1	2.85	Procyanidin B	577.1343	-0.9	425, 407, 287
2	3.02	Cianidanol / epicatechin / catechin	289.0718	0	137, 125
3	3.3	procyanidin B-gallate	729.145	-1.1	441, 407, 289
4	3.55	Piceid	389.1245	0.3	227
5	3.76	resveratrol 3-(6' '-galloyl)-O-β-D-glucopyranoside	541.135	-0.1	313, 227, 169
6	3.95	emodin-glucoside 1	431.0988	0.4	269
7	4.15	Vitexin sulfate / isovitexin sulfate	511.0553	0.1	413, 269
8	4.45	emodin-glucoside 2	431.0989	0.5	269
9	4.57	pelargonidin 3-glucoside malonate	517.0984	-0.3	473, 269
10	4.91	marmesin / decursinol	245.0817	-0.3	230, 159
11	5.4	sulfemodin-glucoside	349.0024	0	269
12	6.28	emodin	269.0455	0	241, 225

Figure S2. Representative mass chromatograms of *Fallopia japonica* root extract (FJE). The mass chromatograms were obtained using UPLC-Q-TOF-MS with negative mode, a total of 12 compounds were identified. Among these resveratrol, emodin-glucoside 1, emodin glucoside 2, procyanidin, and other polyphenols potentially suppress airway inflammation.

2. There are many spelling and language mistakes and the manuscript needs to be corrected by a native English speaker.

Response: Thank you for the observations. As suggested, all grammatical and typographical errors were eliminated. The revised manuscript is proofread by a fluent speaker of English. We believe that the newly revised manuscript is free of linguistic errors.

References

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