

1 Dear Authors,

2 we are pleasantly impressed for the interest aroused from our manuscript and for the valid and  
3 punctual comments you provided. We think the opportunity for discussion that arises may allow to  
4 convey different competences and scientific knowledges to better frame the question and further  
5 deepen this controversial subject.

6 We totally agree on the actual weaknesses of the mono-locus approach in identifying these organisms  
7 as well as on the need to meticulously check the genetic data on official databases for preliminary  
8 pointing out misidentification cases and consequently rejecting unreliable sequences. As you also  
9 mentioned, this latter aspect has been highlighted in the text and we can affirm that it represents a  
10 fixed point in our analytical approach to species identification. Analogously, your statement on the  
11 need to validate each analytical method before its routine application is totally endorsed and already  
12 clearly expressed in the text. Besides this awareness, we would like to clarify that in our work there  
13 was no pretence of revising the taxonomic status of *Mytilus* spp. We are not taxonomic specialists and  
14 we are aware of the large amount of literature related to this topic. However, we must take into  
15 consideration the environment in which (small and medium) food authentication labs generally  
16 operate, as well as the food business operators' (FBOs) needs. In this respect, given that *M.*  
17 *galloprovincialis* and *M. chilensis* are distinct species and that the presence of Northern hemisphere  
18 *M. galloprovincialis* population coexisting with *M. chilensis* population is proven, we think that the  
19 analytical methods currently required for a proper species detection are suitable for solving taxonomic  
20 subtleties, but are unfortunately still poorly applicable in a context of food authentication, where the  
21 labs are asked for providing reliable responses in a short time and above all with cost-effective  
22 operations, according to the companies' needs. Thus, although a multi-locus approach would be  
23 effective, its cost may not be affordable for commercial application especially for the smaller  
24 companies. For this reason, we stopped to reflect if, exclusively for the investigation topic, "*the juice*  
25 *is worth the squeeze*", and this is the reason why we decided to propose this short communication,  
26 also aware on its sort of provocative attitude.

27 Our sentence "*However, at the state of the art, both the species M. chilensis and M. galloprovincialis*  
28 *should rather be simply labelled as "Mytilus sp. - mussel" ("cozza" or "mitilo"), also considering*  
29 *that the origin declaration is mandatory according to the current seafood labelling legislation*  
30 *(Regulation (EU) No 1379/2013) and thus the consumers are informed on the origin even with the*  
31 *adoption of a more generic term."* was intended as a provocative statement to underline FBOs  
32 difficulties in dealing with correct taxonomical identification to ensure market transparency and  
33 fairness. However, we agree with the authors on the fact that this statement might be interpreted as a

34 violation of Regulation EU No. 1379/2013 Art 35 paragraph 1 (a). As regards fairness towards  
35 consumers, it should be noted that prepared and preserved seafood products, which contribute to a  
36 high percentage of products at retail, fall out of the scope of the Regulation by definition. In this  
37 respect, a good amount of imported *Mytilus* are precooked and, thus, such products without specific  
38 scientific name are already legally sold on the market.

39 Nevertheless, considering the economic importance of fresh mussels, the future development of  
40 accurate and validated techniques, supported by the creation of dedicated sequences, for reliable and  
41 cost-effective species discrimination would be valuable. As agreed by us and by the Letter to the  
42 Editor Authors, the establishment of a validated method is especially needed for case to be discussed  
43 in a court of law.