Response to Reviewer 1 Comments

In this study authors evaluated the mechanisms related to tumor–stromal interactions in High-grade serous ovarian carcinoma (HGSOC) progression and found that patients with a higher infiltration of CD68+, CD163+, and CD204+ macrophages had a poorer prognosis. Moreover, co-culture of macrophages and EOC cells showed increased expression of the TAM markers CD163 and CD204, and enhanced proliferation, migration, and invasion. Furthermore, there was a higher YKL40 secretion which increased proliferation, migration, and invasion via extracellular signal–regulated kinase (Erk) signaling. Authors also found that knockdown of integrin β 4 suppressed YKL40–induced proliferation, migration, and invasion as well as Erk phosphorylation in some EOC cells.
Although the manuscript is interesting and generally well written. Several points deserve to be improved.

We would like to thank you for your thorough review of our manuscript and your valuable comments and suggestions. We have carefully considered each of the points raised and have made the corresponding revisions to improve the quality and clarity of our manuscripts. Below, we address each of your concerns in detail.

Reviewer's comment

1. **Lines 45-52**: it deserves to be pointed out that the high mortality rate is also due to chemoresistance occurrence (see PMID: 38203758).

Response 1: We fully agree with your suggestion and have revised the manuscript accordingly. The paper you presented has been added to reference#5.

> Introduction (Lines 52-53)
> The high mortality rate is significantly influenced by the chemoresistance of ovarian cancer.[5]

2. **Lines 57-60**: it is important to highlight that stromal cells also regulate tumor angiogenesis (PMID: 37443812).

Response 2: Thank you for highlighting this important aspect. We have revised the manuscript accordingly. The paper you presented has been added to reference#9.

Introduction (Lines 64 to 67)

CD93, also known as complement protein 1 q subcomponent receptor, which is expressed on monocytes, neutrophils, B cells, and NK cells, has been reported to be involved in the regulation of angiogenesis for tumor growth.[9]

3. **Figure 1A and 6A**: Higher magnifications are necessary to appreciate tissue morphology and staining

Response 3: As per your suggestion, we have adjusted Figures 1A and 6A to a magnification of 400x and modified the scale bar to 20 μm. Additionally, we have enlarged Figure 6A to improve visibility.

4. **Table 1 and 2**: Statistical significant differences should be highlighted in bold

Response 4: As per your comment, we have indicated in bold the statistically significant differences in Tables 1 and 2.

5. **Figure 2C, 4A, 5F**: Densitometric analysis of pERK/ERK must be reported

Response 5: Thank you for your valuable comment. We have presented a graphical representation of the densitometric analysis of pErk/Erk for each condition in Figure S1 for Figures 2C, 4A, and 5F. Please check Supplementary Figure S1A, S1B, and S1D.

6. **Figure 2, 3,4, 5**: Unless replaced with bigger images, invasion images at bottom of the graphs are useless.

Response 6: Thank you for your valuable suggestion. We have moved the migration and invasion images to Figure S2 to enhance the size and clarity of the images for Figures 2, 3, 4, and 5 owing to insufficient space within the figure to display larger images. Please check Supplementary Figure S2.

7. **Figure 5B**: Densitometric analysis of ITGB4 must be reported

Response 7: Thank you for your valuable comment. We present a graphical representation of the densitometric analysis of ITGB4/β-actin for each condition in Figure S1 for Figure 5B.

Please check Supplementary Figure S1C.

8. **Authors must report the number of replicates (N) in the figures legends**

Response 8: Thank you for your suggestion. We have performed all experiments at least three times. Therefore, we have added the following sentence to the 4.12. Statistical Analysis section of the Materials and Methods.

> **Statistical analysis (Lines 556-557)**
> All in vitro experiments were conducted in three independent replicates, each performed three separate times.

9. **4.3. Real-time Quantitative Polymerase Chain Reaction**: primers sequences should be insert in a dedicate table

Response 9: As per your suggestion, we have moved the primer sequences for the real-time quantitative polymerase chain reaction to Supplementary Table S1.