

Responses to the reviewers' comments

1. Q: please specify which type of breast data was used.

Answer: The type of breast cancer is invasive breast cancer, and information has been added in the method section.

2. Q: please, add a diagrammatic figure to propose the possible mechanisms pathway for these findings.

Answer: The diagrammatic figure was added in Supplementary Figure 3.

3. Q: please include sensitivity analysis for these diagnostic and prognostic biomarkers.

Answer: operating curve analysis has been performed on a panel of 7 markers selected to assess the discriminability of the model.

4. Q: Legend figures should be descriptive.

Answer: we have modified the figure captions.