

**Table S1.** Sensitivity analyses of TME scores and tamoxifen benefit.

| Analysis          | Abundance | Number of patients | Full cohort<br>aHR (95%) | Number of patients | Reduced cohort<br>aHR (95%) | Adjusted cohort<br>aHR (95%) |
|-------------------|-----------|--------------------|--------------------------|--------------------|-----------------------------|------------------------------|
| Immune score      | Low       | n = 84             | <b>0.17 (0.08-0.40)</b>  | n = 78             | <b>0.14 (0.06-0.35)</b>     | <b>0.14 (0.05-0.34)</b>      |
|                   | Inter.    | n = 82             | 0.62 (0.29-1.32)         | n = 70             | 0.64 (0.29-1.42)            | 0.67 (0.30-1.50)             |
|                   | High      | n = 85             | 0.69 (0.36-1.35)         | n = 72             | 0.81 (0.39-1.66)            | 0.92 (0.43-1.93)             |
| Endothelial score | Low       | n = 86             | 0.61 (0.33-1.15)         | n = 78             | 0.67 (0.34-1.31)            | 0.71 (0.35-1.46)             |
|                   | Inter.    | n = 84             | <b>0.21 (0.09-0.51)</b>  | n = 76             | <b>0.19 (0.07-0.49)</b>     | <b>0.22 (0.09-0.58)</b>      |
|                   | High      | n = 81             | 0.58 (0.27-1.25)         | n = 66             | 0.57 (0.25-1.32)            | 0.55 (0.23-1.31)             |
| Fibroblasts score | Low       | n = 78             | <b>0.50 (0.27-0.93)</b>  | n = 71             | 0.56 (0.29-1.07)            | 0.62 (0.32-1.20)             |
|                   | Inter.    | n = 86             | <b>0.36 (0.17-0.77)</b>  | n = 75             | <b>0.30 (0.13-0.71)</b>     | <b>0.30 (0.13-0.72)</b>      |
|                   | High      | n = 87             | 0.53 (0.22-1.29)         | n = 74             | 0.51 (0.20-1.28)            | 0.42 (0.16-1.13)             |

Multivariable Cox regression analysis of RFS across cell abundance scores. aHRs compare tamoxifen treatment vs. no endocrine therapy across three models: Full cohort, Reduced: Excludes patients with missing/uncertain ER status (n=58), Adjusted: Reduced cohort with additional adjustment for ER percentage (ER%). TME, Tumour Microenvironment; RFS, Recurrence-Free Survival; aHR, Adjusted Hazard Ratio; CI, Confidence Interval; ER, Estrogen Receptor.