Figure S1. Associations between the expression levels of hub genes and clinicopathological parameters. Association between (A) AMD1, (B) EN1 and (C) VGLL1 expression and tumor size. Association between (D) AMD1, (E) EN1 and (F) VGLL1 expression and lymph node status. Association between (G) AMD1, (H) EN1 and (I) VGLL1 expression and tumor stage. AMD1, S-adenosylmethionine decarboxylase proenzyme; EN1, homeobox protein engrailed-1; VGLL1, vestigial-like protein 1.

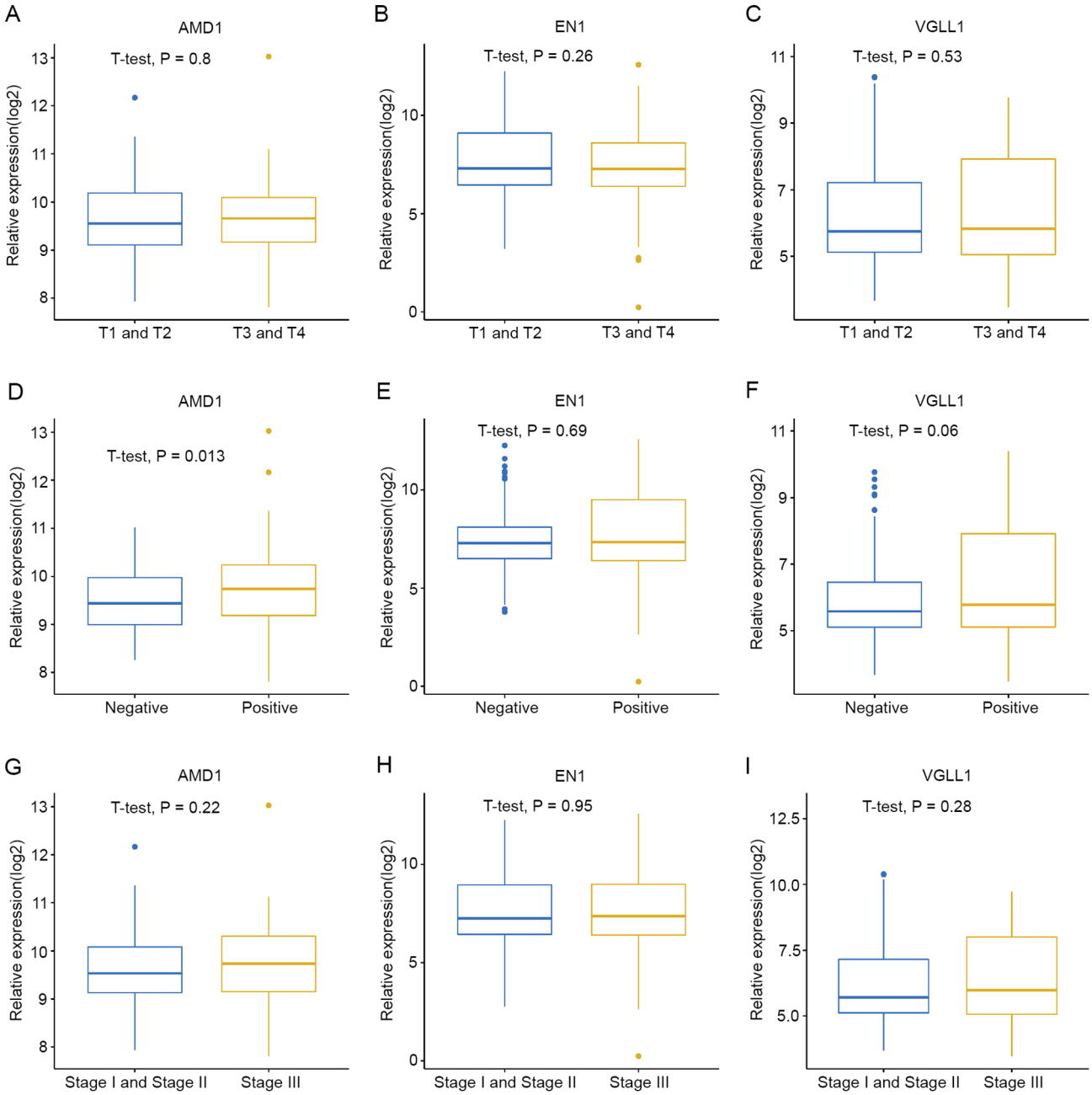

Figure S2. Associations between the expression levels of hub genes and clinicopathological parameters in dataset GSE25065. Association between (A) AMD1, (B) EN1 and (C) VGLL1 expression and tumor grade. Association between (D) AMD1, (E) EN1 and (F) VGLL1 expression and tumor subtype. Luminal means Lumina A and B, normal means normal-like breast cancer. Association between (G) AMD1, (H) EN1 and (I) VGLL1 expression and tumor size. Association between (J) AMD1, (K) EN1 and (L) VGLL1 expression and lymph node status. Association between (M) AMD1, (N) EN1 and (O) VGLL1 expression and tumor stage. *P<0.05, **P<0.01, ***P<0.001 and ****P<0.0001. ns, no significance; AMD1, S-adenosylmethionine decarboxylase proenzyme; EN1, homeobox protein engrailed-1; VGLL1, vestigial-like protein 1; Her2, human epidermal growth factor receptor 2.

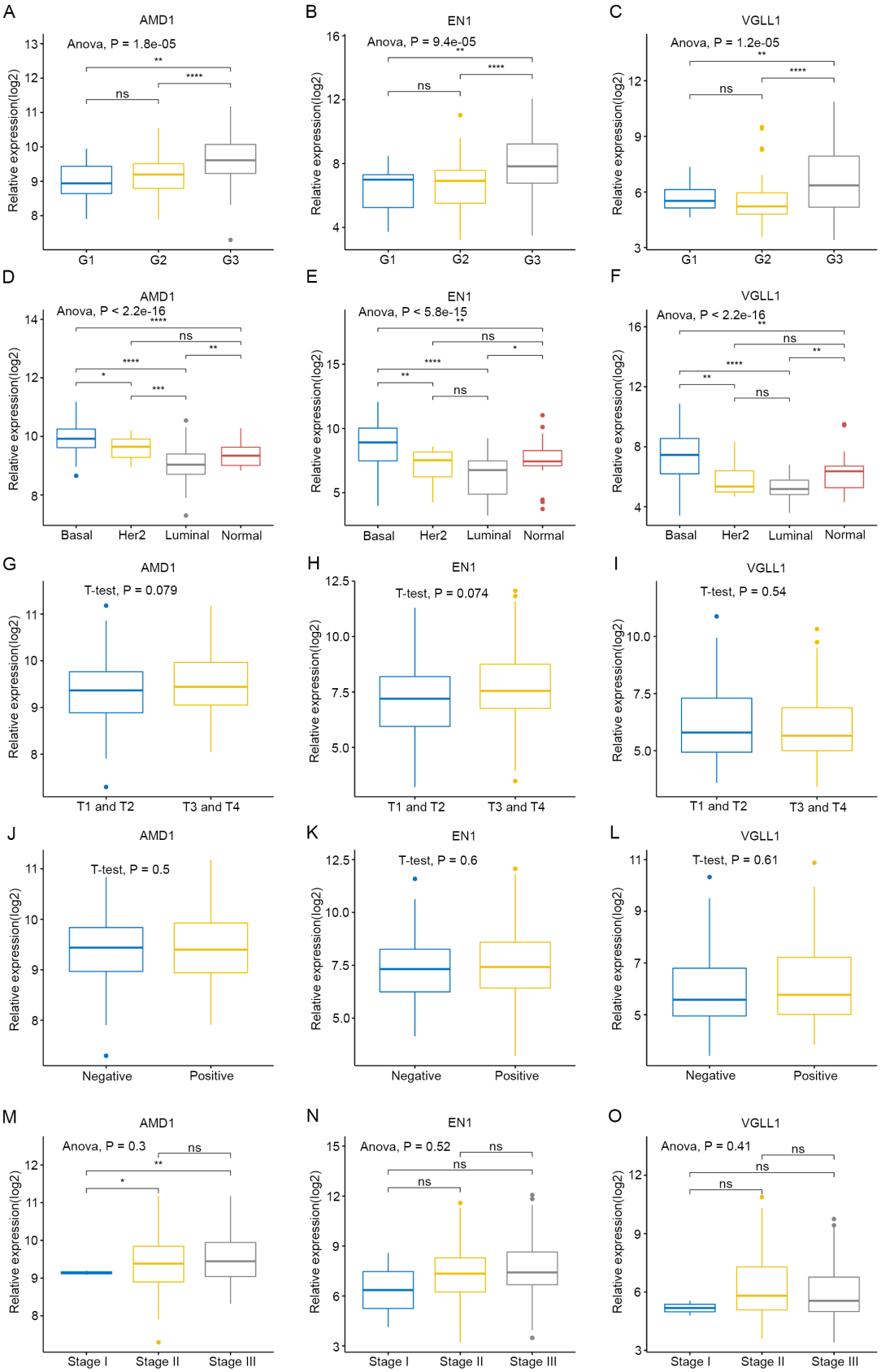

Figure S3. Associations between the expression levels of hub genes and clinicopathological parameters in dataset GSE42568. Association between (A) AMD1, (B) EN1 and (C) VGLL1 expression and tumor grade. Association between (D) AMD1, (E) EN1 and (F) VGLL1 expression and estrogen receptor status. Association between (G) AMD1, (H) EN1 and (I) VGLL1 expression and tumor size. Association between (J) AMD1, (K) EN1 and (L) VGLL1 expression and lymph node status. **P<0.01, ***P<0.001 and ****P<0.0001. ns, no significance; AMD1, S-adenosylmethionine decarboxylase proenzyme; EN1, homeobox protein engrailed-1; VGLL1, vestigial-like protein 1.