**SUPPLEMENTAL figureS legends**

**Supplemental figure 1:** The ANRIL pathway.

**Supplemental figure 2: Immunohistochemical staining for p15, p16, and p14.**

Overexpression (H score 2 and 3) of p15, p16 and p14 in cancer cells was observed respectively in 37.5%, 51.3%, and 41.2% of IBCs. Score 1: weak cytoplasmic staining for p14, p15 and p16 is ssen in a subset of tumor cells. Score 2: moderate cytoplasmic staining for p14, p15 and p16 is seen in most of tumor cells. Score 3: strong and diffuse cytoplasmic staining for p14, p15 and p16 is seen in most of tumor cells.

**Supplemental figure 3: Immunohistochemical staining for H3K27me3 and H3K27ac.**

Nuclear under expression of H3K27me3 (H score 0 and 1) was observed in 76.3% of IBCs. Nuclear overexpression of H3K27ac (H score 2 and 3) in cancer cells was observed in 73.8% of IBCs. Score 0: no nuclear staining for H3K27ac and H3K27me3 is seen in tumor cells. Score 1: weak nuclear staining for H3K27ac and H3K27me3 is seen in a subset of tumor cells. Score 2: moderate nuclear staining for H3K27ac and H3K27me3 is seen in a subset of tumor cells. Score 3: strong and diffuse nuclear staining for H3K27ac and H3K27me3 is seen in most of tumor cells.

**Supplemental figure 4:** Dendrogram of the 10 ANRIL pathway genes constructed using hierarchical clustering, according to the gene profiling of the 456 breast tumors.