SUPPLEMENTARY DATA ANALYSIS

Analysis of *PTENP1* genomic status

We examined alterations of the *PTENP1* genomic loc*us*. Array-based comparative genomic hybridization (aCGH) databases from *The Cancer Workbench* (https://cgwb.nci.nih.gov/cgi-bin/heatmap) indicated that the *PTENP1* locus undergoes copy number (CN) losses in a subset of tumors. For instance, in the TARGET Acute Lymphoblastic Leukemia (ALL) project (St. Jude/NCI), *PTENP1* is lost in approximately 20% of ALL patient samples **(Supplementary Fig. 9a)**. In these tumors *PTENP1* loss is commonly, but not always part of larger losses of the 9p arm. This observation corroborates previous reports in different tumor types, *PTENP1* has been shown to undergo LOH (detected as loss of the microsatellite marker D9S1878)[1-3]. Importantly, concomitant loss of *CDKN2A* with *PTENP1,* as observed in large losses of 9p*,* may provide an additional advantage over specific loss of only *CDKN2A*, because PTEN expression would be consequently decreased.

Furthermore, we mined various databases available through NCBI GEO (http://www.ncbi.nlm.nih.gov/geo/) for changes in *PTENP1* genomic status. In a study of 118 breast cancer and 44 normal samples, 11/118 (9.3%) demonstrated significant deletion of a region overlapping with *PTENP1* (chr 9:33592959-33692166) and 11 independent breast cancer samples had significant deletion on chromosome 10 region overlapping with *PTEN* (chr10:89499031-89747774; **Table 1**). The magnitude of deletion was similar for *PTEN* and *PTENP1* with 1.48 and 1.4 copies, respectively compared to normal copy number 2. Upon closer analysis of 9p in the 11 cases of *PTENP1* CN losses, it is apparent that *PTENP1* loses can occur independently of *CDKN2A* loss **(Supplementary Fig. 9b)**. However, only 1/11 cases demonstrated a statistically significant loss of the *PTENP1* region only **(Supplementary Fig. 9b, bottom panel)**.

These findings indicate that both *PTEN* and *PTENP1* copy number losses occur in breast cancer.

1. Herbst, R.A., et al., *PTEN and MXI1 allelic loss on chromosome 10q is rare in melanoma in vivo.* Arch Dermatol Res, 1999. **291**(10): p. 567-9.
2. Perinchery, G., et al., *High frequency of deletion on chromosome 9p21 may harbor several tumor-suppressor genes in human prostate cancer.* Int J Cancer, 1999. **83**(5): p. 610-4.
3. Marsit, C.J., et al., *Alterations of 9p in squamous cell carcinoma and adenocarcinoma of the lung: association with smoking, TP53, and survival.* Cancer Genet Cytogenet, 2005. **162**(2): p. 115-21.