

## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Multi-study MAF file summarizing mutation rates across six studies used for gene selection and hotspot analysis

File Name: Supplementary Data 2

Description: Sequence coverage data

File Name: Supplementary Data 3

Description: Final MAF file of all mutations for 83 targeted gene in study

File Name: Supplementary Data 4

Description: Mutual exclusivity and mutual occurrence data

File Name: Supplementary Data 5

Description: Subtype associations with mutation status in UBC-TAM and MA12

File Name: Supplementary Data 6

Description: Recurrence and breast cancer specific univariate survival for genes based on mutation type

File Name: Supplementary Data 7

Description: Functional analysis of rare mutations

File Name: Supplementary Data 8

Description: Targeted genes and probes

File Name: Supplementary Data 9

Description: BRCA and ATM pathogenicity analysis