

Supplementary Table 1. Gene list for targeted sequencing.^a

KRAS	MYB	NF1	SF3B1	AKT1	CBFB
CTCF	FOXA1	MDM2	MDM4	MLL2	MLL3
NCOR1	PIK3R1	PTEN	TBX3	AGTR2	ATR
BIRC6	BRAF	CDH1	CDKN1B	CSF1R	DDR1
ERBB2	GATA3	INSRR	JAK1	JAK2	KIT
LTK	LYN	MALAT1	MAP2K4	MAP3K1	MET
PDGFRA	PIK3CA	RB1	RUNX1	TP53	ESR1
SMG1	ERBB3	ERBB4	MTOR	FRG1B	MAP3K4
MLL	ATM	NOTCH4	PRKDC	PRLR	RELN
BRCA1	BRCA2	NCOA3	NCOR2	ARID1A	MED12
AKT2	AKT3	ARID1B	AURKA	CASP8	CAV1
FBXW7	FOXC1	FZD7	MAGI3	MAP3K13	MTAP
MYBL2	PIN1	PPP2R2A	RB1CC1	RERG	SMARCD1
TAB1	TAB2	TGFB1	TGFB2	XBP1	

^a See Banerji, S. et al. Sequence analysis of mutations and translocations across breast cancer subtypes. *Nature* 486: 405-409 (2012); Chanock, S.J. et al. Somatic sequence alterations in twenty-one genes selected by expression profile analysis of breast carcinomas. *Breast Cancer Res.* 2007;9:R5 (2007); Curtis, C. et al. The genomic and transcriptomic architecture of 2,000 breast tumours reveals novel subgroups. *Nature* 486: 346-352 (2012); Stephens, P.J. et al. The landscape of cancer genes and mutational processes in breast cancer. *Nature* 486: 400-404 (2012).

Supplementary Table 2a. Mutations identified in 436 BBD samples (218 case-control pairs).

Supplementary Table 2b. Mutations identified in 7 paired BBD and IBC samples.