

**Supplementary Table 1.** Molecular features of breast cancer cell line panel with gene cluster status, breast cancer subtypes, and mutation status.

	MDAMB436	HCC1395	HCC1806	MX1 <sup>1,2</sup>	SUM149PT <sup>3</sup>	BT20	HCC38	HCC1937 <sup>4</sup>	HCC1137	HCC1143	MDAMB231	HCC2185	BT549	HS578T
<b>Gene Cluster<sup>5</sup></b>	BaB	B	BaA	NA	BaB	BaA	BaB	BaA	BaA	BaA	BaB	Lu	BaB	BaB
<b>Subtype<sup>4</sup></b>	MSL	U	BL2	NA	BL2	U	BL1	BL1	IM	BL1	MSL	LAR	M	MSL
<b>Subtype<sup>6</sup></b>	CL	CL	B	NA	B	B	CL	B	B	B	CL	Lu	CL	CL
Tp53 <sup>MUT</sup>														
BRCA1 <sup>MUT</sup>														
BRCA2 <sup>MUT</sup>														
PTEN-def <sup>7,8</sup>														
ATM <sup>MUT</sup>														
ATR <sup>MUT</sup>														

Abbreviations: BaB, basal B; B, basal; BaA, basal A; NA, not available; Lu, luminal, MSL, mesenchymal stem-like; U, unclassified; BL1, basal-like 1; BL2, basal-like 2; IM, LAR, luminal androgen receptor; M, mesenchymal; CL, claudin-low

## References

1. Donawho CK, Luo Y, Luo Y, et al. ABT-888, an orally active poly(ADP-ribose) polymerase inhibitor that potentiates DNA-damaging agents in preclinical tumor models. *Clinical Cancer Res.* 2007;13:2728-37.
2. Nair RS, Kumar JM, Jose J, et al. Increased sensitivity of BRCA defective triple negative breast tumors to plumbagin through induction of DNA Double Strand Breaks (DSB). *Scientific Reports* 2016;6:26631.
3. Wasieleski, M., Elstrodt, F., Klijn, J.G. et al. Thirteen new p53 gene mutants identified among 41 human breast cancer cell lines. *Breast Cancer Res Treat* 99, 97–101 (2006). <https://doi.org/10.1007/s10549-006-9186-z>.
4. Lehmann BD, Bauer JA, Chen X, et al. Identification of human triple-negative breast cancer subtypes and preclinical models for selection of targeted therapies. *The Journal of Clinical Investigation* 2011;121:2750-67.
5. Neve RM, Chin K, Fridlyand J, et al. A collection of breast cancer cell lines for the study of functionally distinct cancer subtypes. *Cancer Cell* 2006;10:515-27.
6. Heiser LM, Sadanandam A, Kuo WL, et al. Subtype and pathway specific responses to anticancer compounds in breast cancer. *Proceedings of the National Academy of Sciences of the United States of America* 2012;109:2724-9.
7. Tang YC, Ho SC, Tan E, et al. Functional genomics identifies specific vulnerabilities in PTEN-deficient breast cancer. *Breast Cancer Res.* 2018;20(1):22. doi:10.1186/s13058-018-0949-3
8. Brunner A, Suryo Rahmanto A, Johansson H, et al. PTEN and DNA-PK determine sensitivity and recovery in response to WEE1 inhibition in human breast cancer. *eLife.* 2020;9:e57894. Published 2020 Jul 6. doi:10.7554/eLife.57894
9. Tate JG, Bamford S, Jubb HC, et al. COSMIC: the Catalogue Of Somatic Mutations In Cancer, *Nucleic Acids Research*, Volume 47, Issue D1, 08 January 2019, Pages D941–D947, <https://doi.org/10.1093/nar/gky1015>