Supplementary Figure legend

S1 (Related to Fig. 1). A) Western blot analysis of PKM2 and PKM1 protein level in PKM2 shRNA knockdown MCF10A, MCF12A, MDA-MB-231, and MDA-MB-435 cells. **B)** The growth curves of PKM2 shRNA knockdown MDA-MB-435 cells by MTT assays. "**" means P<0.01. **C)** The growth curves of PKM2 shRNA knockdown MCF12A cells by MTT assays. "n.s" means not statistically significant.

S2 (Related to Fig. 2). A) Representative IHC staining of pY105-PKM2 and t-PKM2 in MMTV-neu mice MFP and mammary tumor samples. The signal intensity of total PKM2 per cell is similar between mammary epithelial cells (not fat cells in the mammary gland) and invasive breast cancer cells.

S3. (Related to Fig 4). A) PKM and YAP/TAZ interaction network (http://genemania.org). **B)** Western blot analysis of PKM2 knockdown efficiency and YAP protein level in MCF10A cells. **C)** Quantitative PCR of the relative YAP mRNA level after knocking down PKM2 in MCF10A cells. **D)** Western blot analysis of YAP protein level in the cytoplasmic fraction of 10A.pLHCX, 10A.PKM2, 10A.Y105F, and 10A.Y105D cells. Quantification of YAP protein normalized to α-tubulin was conducted by Image J software. **E)** Immunofluorescent imaging of the expression and localization of PKM2 (green), YAP (red) and the nucleus (DAPI, blue) in the 231.shCtrl, 231.shPKM2-1, and 231.shPKM2-4 cells. **F)** Immunofluorescent imaging

of the expression and localization of exogenous mPKM2 variants (green), YAP (red) and the nucleus (DAPI, blue) in the 231.shPKM2-1 cells.

S4. (Related to Figure 4) A) Coexpression correlation of PKM2 and CTGF (a downstream effector of YAP) was conducted based on 130 patient samples from Esserman breast cancer dataset (https://www.oncomine.com). **B)** Quantitative PCR of the relative YAP mRNA level in the 10A.pLHCX, 10A.PKM2, 10A.Y105F, and 10A.Y105D cells. **C)** Quantitative PCR of the relative LATS1 mRNA level in the 10A.pLHCX, 10A.PKM2, 10A.Y105F, and 10A.Y105D cells. **D)** Flow cytometry analysis of the cancer stem-like cell population ($CD44^{hi}/CD24^{neg}$) in the 10A.Y105D cells with YAP siRNA knockdown. **E)** Western blot analysis of YAP and TAZ protein level in the 10A.Y105D cells with YAP siRNA knockdown. **F)** Left: Western blot analysis of YAP protein level in the 10A.pLHCX and 10A.Y105D cells with YAP shRNA knockdown; Right: The growth curves of the 10A.pLHCX and 10A.Y105D cells with YAP shRNA knockdown. "***" means $P<0.001$, and "n.s" means not statistically significant.

S5. (Related to Figure 6) A) Correlation between pY1221/1222-ErbB2 and pY105-PKM2 immunoreactivity score (IRS) in the wildtype mice MFP and mammary tumors from $PTEN^{-/-}$/NIC mice (treated with vehicle). **B)** Correlation between pY1221/1222-ErbB2 and nuclear YAP IRS in the wildtype mice MFP and mammary tumors from $PTEN^{-/-}$/NIC mice (treated with vehicle). **C)** Correlation between pY105-PKM2 and

nuclear YAP IRS in the wildtype mice MFP and mammary tumors from PTEN$^{-/-}$/NIC mice (treated with vehicle). **D)** Correlation between pY105-PKM2 and CD44 IRS in the wildtype mice MFP and mammary tumors from PTEN$^{-/-}$/NIC mice (treated with vehicle).