



Figure 2 | Cyclin D-CDK4 negatively regulates PD-L1 protein stability. **a–d**, IB analysis of WCL derived from wild type versus combinational (*cyclin D1^{-/-}D2^{-/-}D3^{-/-}*) (**a**) or single isoform *cyclin D* knockout MEFs (**b**), MDA-MB-231 cells depleted *cyclin D1* or *cyclin D3* using shRNAs (**c**), or MMTV-*Wnt1* induced mouse mammary tumors with/without genetic depletion of *cyclin D1* (**d**). **e–h**, IB analysis of WCL derived from wild type versus *cdk4^{-/-}* MEFs (**e**), MDA-MB-231 cells depleted *CDK4* using shRNAs (**f**), or multiple breast cancer cell lines treated with palbociclib

(0.5, 1 μM) for 48 hours (**g**, **h**). **i**, **j**, Immunofluorescence staining of PD-L1 and CD3 in mouse mammary tumors induced by MMTV-*ErbB2* treated with vehicle or palbociclib as described in Method (**i**) and the quantification of CD3⁺ T cell population (**j**). The scale bar: 50 μm. **k**, FACS analysis for PD-L1 or CD3⁺ T-cell populations from MC38 implanted tumors treated with vehicle or palbociclib for 7 days. Vehicle, *n* = 4 for (**i**, **j**) or 7 mice for (**k**); palbociclib, *n* = 4 for (**i**, **j**) or 7 mice for (**k**). Error bars, ± s.d., two-tailed *t*-test, ***P* < 0.01, ****P* < 0.001 (two-tailed *t*-test).