cells), or 22RV1-Luc (2×10^5 cells) or PC3-Luc (5×10^5 cells) were resuspended in 100µl of saline with 20% Matrigel (BD Biosciences) and were implanted subcutaneously into the left flank regions of the mice. Details are available in *Supplementary Material Experimental Procedures*.

Statistical analysis

All values presented in the study were expressed as mean +/- SEM. The significant differences between the groups were analyzed by a Student's *t* test and a *P* value of <0.05 or <0.001 were considered significant.

SUPPLEMENTAL MATERIAL

Supplemental Information includes detailed experimental procedures and eight supplementary figures.

Figure S1. rSPINK1 or CM collected from 22RV1 cells induces invasion in benign or cancer cells.

Figure S2. CM collected from 22RV1 cells induces cell invasion, but not CM from LNCaP cells.

Figure S3. *PRSS1* (trypsin1) knockdown in 22RV1 cells has no effect on SPINK1 mediated cell invasion.

Figure S4. Exogenous rSPINK1 has no effect on PSA in 22RV1 cells.

Figure S5. SPINK1 mAb reduces $SPINK1^+$ cell motility and SPINK1 knockdown alters MAPK pathway**.**

Figure S6. Exogenous SPINK1 induces EGFR dimerization and phosphorylation.

Figure S7. SPINK1 mAb induces decrease in tumor proliferation index, but has no effect on toxicity markers.

Figure S8. Anti-IgG or -SPINK1 mAb or C225 administration has no effect on mouse body weight.

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