Phospholipase D2 promotes disease progression of renal cell carcinoma through the induction of angiogenin.

- Expression levels of PLD2 are associated with tumor progression of clear cell renal cell carcinoma (A, B).
- Knockdown of PLD2 in clear cell renal cell carcinoma cells suppresses tumor growth and invasion in vivo (E-G).
- PLD2 protein levels are elevated in the sites of metastasis in patients with clear cell renal cell carcinoma (C, D).

Approximately one-quarter of patients with RCC present with locally advanced or metastatic disease at diagnosis, and about 20%-40% of those with confined primary tumors will develop metastatic disease. Although new target therapies and immunotherapies have emerged in recent years, their efficacy is not sufficient to overcome advanced RCC.

The present study show that elevated expression of phospholipase D2 (PLD2) was associated with poor prognosis, and that PLD2 ablation and PLD2 small-molecule inhibitors suppress cell proliferation and invasion of renal cancer cells in vitro, thereby providing the first evidence that targeting PLD2 is a good candidate for future therapeutic and clinical applications against metastatic RCC.

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