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**Title:** The effect of siRNA on invasion capability of small cell lung cancer

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**Body:** Objective To study the inhibitory effect of CXCR4-targeted small interference RNA on invasion capability of NCI-H446 in vitro. Methods To design chemical synthesis of CXCR4-specific siRNA based on the target sequence for CXCR4 cDNA with NCI-H446 cells transfected with siRNA. To detect the expression of CXCR4 by RT-PCR and Western Blot. Invasion capability of NCI-H446 cells in vitro was evaluated by transwell chamber model and the proliferation capability was determined by CCK-8 assay. Results After transfected with CXCR4-siRNA, the expression of CXCR4 mRNA and protein was down-regulated significantly. The invasion capability of cells in vitro decreased compared with the empty liposome group. The penetrating number in CXCR4-siRNA transfected group was  $32.3 \pm 3.8$  VS  $62.1 \pm 8.2$  ( $P < 0.001$ ). There was no effect on cell proliferation after transfection of CXCR4 siRNA on NCI-H446 cells. Conclusion CXCR4 siRNA effectively down-regulated the expression of CXCR4 gene and decreased invasion capability of NCI-H446 cells in vitro.