GENETICS

N-cadherin—a target for prostate cancer therapy

The major cause of death in patients with prostate cancer is progression from androgen-dependent disease to castration-resistant disease. A new study has shown that this resistance is associated the expression of N-cadherin. Therapeutic targeting of N-cadherin might delay the progression of prostate cancer, Tanaka and colleagues report.

In a gene-expression analysis of xenografts and tumor samples, N-cadherin expression was notably higher in castration-resistant prostate cancer than in androgen-dependant disease. Moreover, the researchers found that N-cadherin expression in androgen-dependent cell lines seemed to encourage invasion, metastasis and progression to castration-resistant prostate cancer.

The investigators treated castration-resistant cell lines *in vitro* with monoclonal antibodies against N-cadherin to determine whether this factor might be a potential

therapeutic target in advanced prostate cancer. The results were promising: invasion, attachment and proliferation of prostate cells were inhibited by the antibodies. In mouse models of castration-resistant prostate cancer, the antibodies slowed tumor growth and inhibited metastasis and invasion. Furthermore, increasing the dose of antibodies in mice with larger tumors resulted in complete regression in more than 50% of the tumors.

These results highlight the role of N-cadherin in the development of castration-resistant prostate cancer. The findings also suggest that therapeutic targeting of N-cadherin may be a promising new treatment option.

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Original article Tanaka, H. *et al.* Monoclonal antibody targeting of N-cadherin inhibits prostate cancer growth, metastasis and castration resistance. *Nat. Med.* **16**, 1414–1420 (2010)