

PROSTATE CANCER

'Galectin signature' reveals gal-1 as key player in angiogenesis

A research team comprising investigators from Argentina, France and the USA has identified a unique expression profile of galectins that can delineate the different stages of prostate cancer progression. Based on their initial findings, they were able to pinpoint a specific role for galectin-1 (gal-1) in neovascularization, and suggest it might be an attractive therapeutic target. The results of their collaborative effort are published in *Cancer Research*.

Galectins are a family of glycan-binding proteins with known roles in tumour cell proliferation and invasiveness; a number of family members have previously been implicated in prostate cancer. "Despite considerable progress in identifying the roles of individual galectins in tumour biology, an integrated portrait of the galectin network in the prostate cancer tumour microenvironment is lacking," says Gabriel Rabinovich, corresponding author.

Researchers first compiled galectin expression profiles from various prostate cancer cell lines and human prostate specimens. They found that gal-1 was the most abundant galectin, with higher levels of expression in the most aggressive prostate cancer, and gal-8 was expressed at moderate levels at all stages. Other family

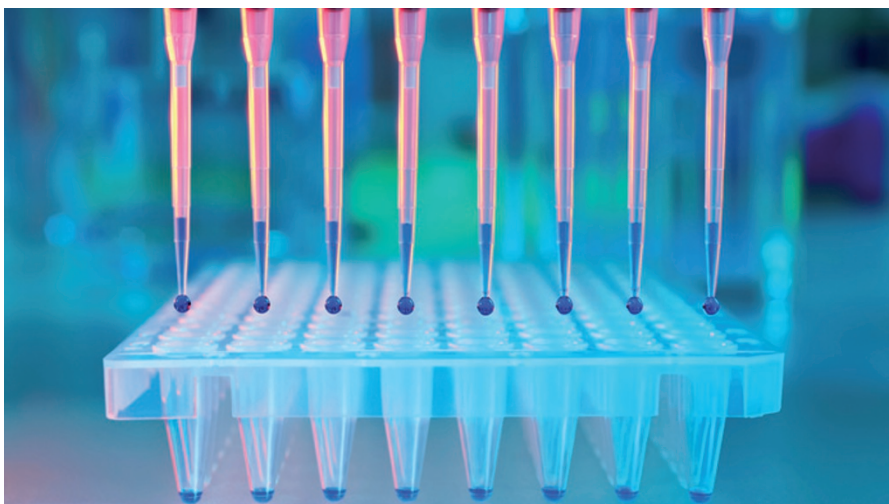
members were expressed at low levels that tended to decrease as disease progressed.

Gal-1's known involvement in Kaposi's sarcoma led the investigators to study its potential role in neovascularization of prostate tumours. They found that conditioned medium from gal-1-expressing prostate cancer cells could induce the formation of capillary-like tubes in an *in vitro* tubularization assay, and that subcutaneous injection of matrigel containing gal-1-expressing cells into nude mice was able to induce angiogenesis, as measured by haemoglobin content. The latter proangiogenic effect was reduced in the presence of antibody against gal-1.

With such promising findings, translation to the clinic is sure to follow. "A major challenge in the future will be to examine whether gal-1 therapy can be used for the treatment of chemotherapy-resistant tumours and advanced castration-resistant prostate cancer, either alone or in combination with other therapeutic agents," Rabinovich explains.

Sarah Payton

Original article Laderach, D. J. *et al.* A unique galectin signature in human prostate cancer progression suggests galectin-1 as a key target for treatment of advanced disease. *Cancer Res.* doi:10.1158/0008-5472.CAN-12-1260



© iStockphoto/Thinkstock