Increasing ADAMTS5 Protein Production May Control Cancer Progression

Assoc Prof Ge Ruowen
Department of Biological Sciences

ADAMTS5 is an extracellular, zinc-dependent proteinase that has for many years been considered particularly important to the development of osteoarthritic and rheumatic diseases because its proteoglycanase activity digests proteoglycans in arthritic joint cartilage. Asso Prof Ge Ruowen and her colleagues recently demonstrated for the first time that ADAMTS5 is also an anti-angiogenic and anti-tumourigenic protein, supressing the formation of tumours by restricting the growth of their blood vessels. The team found that increased ADAMTS5 expression resulted in the potent suppression of melanoma growth in mice.

This finding implies that ADAMTS5 could be an important player in human cancer. Indeed, ADAMTS5 expression is suppressed in various human cancers, including colon, prostate and breast cancer. Finding ways to increase ADAMTS5 production may offer a method of controlling cancer progression by starving the tumor of its blood supply.

The paper reporting the research team's findings triggered a commentary article in the same issue of the *American Journal of Pathology* and a recommendation for 'special significance in its field' from F1000, the premier post-publication peer-review service for biological and medical research.

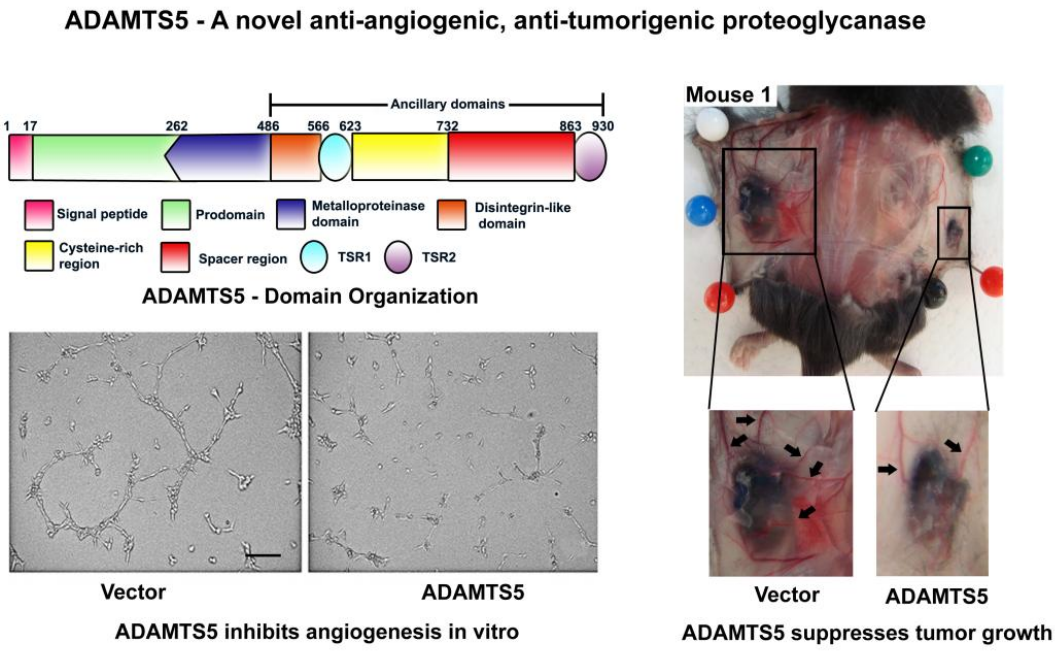

Figure 1: Domain organisation of ADAMTS5 and examples of anti-angiogenic and anti-tumorigenic activity.

Publication:

Kumar, S., Sharghi-Namini, S., Rao, N. and Ge, R. ADAMTS5 functions as an anti-angiogenic and anti-tumorigenic protein independent of its proteoglycanase activity. *Am. J. Pathol.* 181(3): 1056-68 (2012).