

Spotlight

By Caroline Seydel

Fighting Bone Cancer

David *et al.*

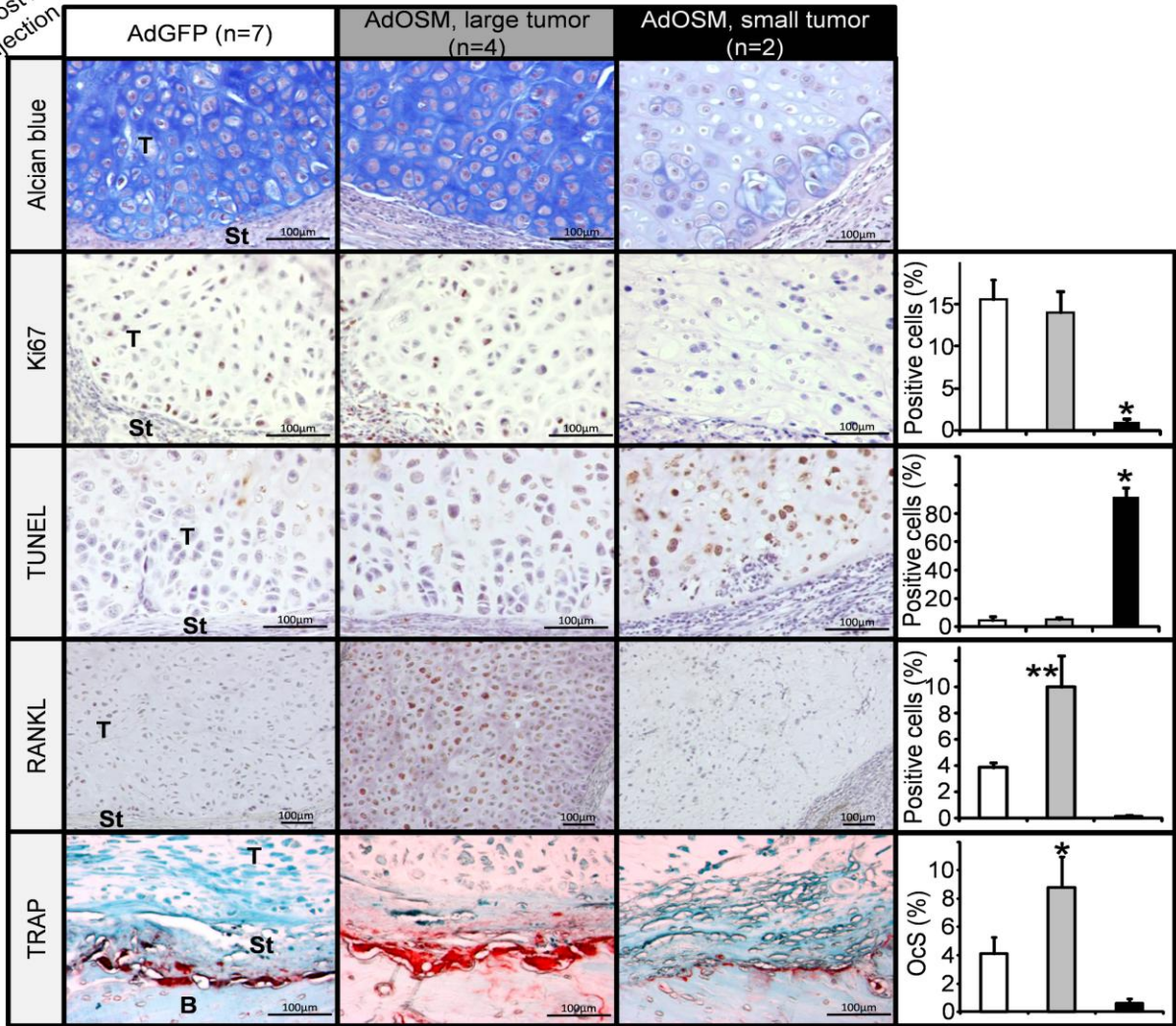
<http://doi.wiley.com/10.1002/ijc.25776>

Chondrosarcoma is a bone tumor with few options for treatment. In search of expanding those options, David *et al.* took a crack at thwarting the tumor with cytokines. They found that one, oncostatin M, halted the cell cycle in four out of the five chondrosarcoma cell lines tested.

Resistant to conventional chemotherapy and radiotherapy, chondrosarcomas generally must be treated with surgery, and amputation may be necessary in some cases. Recent studies have described the successful use of cytokines against other bone tumors; so to explore new ways to fight chondrosarcoma, the researchers looked to immunotherapy. Oncostatin M (OSM) is a cytokine in the IL-6 family that can inhibit cell growth and division in other types of cancer. The researchers treated rat chondrosarcoma cells with 9 cytokines and found that OSM inhibited cell growth most effectively. They determined that OSM does not induce cell death, but blocks the cell cycle and also makes the cells more sensitive to being killed by the kinase inhibitor staurosporine. The authors also establish that OSM likely works through the JAK3/STAT1 pathway; when they applied an inhibitor of JAK3, it prevented OSM from inhibiting cell growth.

On the other hand, OSM also causes some unwanted side effects, including generalized inflammation and problems with bone remodeling. The authors suggest that applying OSM locally could contain the negative effects, and using it together with agents that prevent bone loss could be a promising strategy.

D9 post A_v injection



Blue areas, which indicate tumor cells, are markedly decreased in smaller tumors injected with adenovirus encoding OSM