



ATA Scientific – Travel Award Runner up 2011

What I consider the most interesting or significant discovery/development during the 12 months in the field of science that I work.

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A recent discovery demonstrated the potential of antimicrobial functionalized genetically engineered spider silk as a biomaterial for bone tissue engineering applications. Spider silk was chosen as it offers both mechanical stability and biocompatibility. Furthermore, recombinant DNA technologies allow other protein domains not normally found in spider silks to be fused to the spider silk proteins. New characteristics were added to the silk and this provides a new route to control biomaterial properties related to both the features and biological interactions. In this case, the addition of antimicrobial peptides to reduce infections at the implantation sites was achieved.

The development of this new generation of biomaterial can be regarded as a new chapter in biomaterial history. Metals are the pioneer in this field followed by polymers but they lack the power of nature which can be found in spider silk. The advancement in this field is beneficial to patients who suffer from bone related disease or injury. An interesting “side effect” of the potential uses of spider silk is that spider can contribute to our community in a “softer” approach rather than appearing right in front of you and get hit by your thongs immediately!



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