BPC-157 is becoming significantly more popular as a research peptide as scientists continue to determine the overall benefits of using this substance to boost the ability of an animal to heal damaged tissue. Much of the research, at this point, revolves around determining the full use of this product as well as the potential implications of administering BPC-157 to different animals, determining if it will, in fact, behave in the same way—regardless of the type of tissue that it interacts with.

BPC-157 is a pentadecapeptide that has 15 amino acids. This is a partial sequence of a natural body protection compound which was discovered within gastric juices and determined that it could be isolated for further uses throughout an animal’s body.

In experiments with live animals it has been found that applying BPC-157 can accelerate the healing process in a variety of different types of wounds. This was most commonly tested in the Achilles tendons of rats.

**BPC-157 in the Achilles Tendons of Rats**

The study was performed to determine the potential mechanisms housed within BPC-157 to enhance injured tendons in healing.

- During the experiment, the outgrowth of the fibroblasts within the explants of the tendons was cultured with or without the application of BPC-157 to examine the process.

- Results of this study indicated that cell proliferation of the fibroblasts that were derived from the Achilles tendon in the rat was not effected directly by the presence of BPC-157. However, the cells that were treated with BPV-157 saw a significant increase in their survival rate, compared to those that were experiencing stress from the H(2)O(2) stress.

- The presence of BPC-157 marked a noticeable increase in the vitro migration of the tendon fibroblasts. These results were application-dependent which was revealed based on the spreading of these fibroblasts in samples, housed in culture dishes.

- The F-actin formations that were detected in the FITC-phalloidin staining were introduced along with the fibroblasts that were treated with BPC-157. The expression of proteins that activated the paxillin and FAK in these samples was tested by Western blot analysis.

The analysis of these samples was found to show application-dependent increases in BPC-157. Simultaneously, the total amount of protein in these samples was not altered by these effects. This allowed researchers to conclude that BPC-157 is capable of promoting ex-vivo outgrowth from tendon fibroblasts which include tendon explants.

This peptide can also aid in the survival of cells experiencing stress and the in vitro migration of fibroblasts from tendons. This is likely to be mediated by activating the pathways of the FAK-paxillin in an animal’s body.
Anti-inflammatory Effects on Experimental Periodontitis

BPC-157 was tested for its anti-inflammatory effects, along with its ability to heal wounds in organs and targeted tissues.

- The method for testing this ability revolved around investigating the effects of this peptide on bone resorption and inflammation in rats with experimental periodontitis.

- First the acute effects of BPC-157 were tested by applying the chemical using laser Doppler flowmetry on the gingival blood flow. Periodontitis was then produced using a silk ligature that was placed on the left lower molar.

- Rats that were provided applications of BPC-157 were assessed using the Evans blue plasma technique as well as histology while Alveolar bone loss was monitored using microCT.

Overall, BPC-157 was shown to reduce plasma excavation significantly and improved alveolar bone destruction. This did not impact the blood circulation around healthy gingiva. It also suggests that this peptide could potentially be used to manage periodontal disease.

Preventing Gastric Lesions

Gastric damage from ethanol administration in rats is unlike the chronic administration of alcohol in drinking water which leads to portal hypertension and liver lesions.

- A variety of chemicals are known to assist in reducing these effects. Specifically, applying BPC-157 has been found to help reduce gastrointestinal models.

- This chemical was applied alongside propranol and saline. These were administered once a day starting 10 days before the alcohol was consumed or since the drinking began. Some also began two months after the alcohol consumption began for the sake of comparison.

When applied the pertinent lesions on the stomach mucosa was antagonized but the appearance of lesions lessened when the chemical was administered daily, throughout the periods where alcohol was consumed. These results indicate that BPC-157 administered in combination with propranol and ranitidine could help reverse the effects of gastric lesions on stomach mucosa that occur from chronic drinking and could have potential in future therapy.

The isolation process for natural BPC-157 is somewhat delicate. Given the care that must be taken in preparing samples for study, it is vital that individuals that plan to use BPC-157 in a research setting make the effort to purchase this peptide from a qualified buyer. It is also important to do careful research on the stability of this peptide, to ensure that all trials can be replicated accurately and treated in a manner that will allow for accurate research.

Resource Box:
