Spinal instability in rats counteracted by pentadecapeptide BPC 157

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To induce spinal instability, we focused on bilateral facetectomy in rats and possible therapeutic benefit with the stable gastric pentadecapeptide BPC 157 given in the drinking water. Male Albino Wistar rats (12 weeks aged, 350-400 g b.w.), 4 rats per group, were used in the experiment. In this study, the bilateral paravertebral muscles attached to the L3–L4 segment were peeled from the lumbar spine to expose the posterior bony elements. The rats then underwent complete resection of bilateral L3–L4 facet joints without neural tissue injuries. After that, muscle and skin incsion were closed and animals returned to cages in pairs. The medication was administrated through drinking water (BPC 157 10 ng/kg, 0.16 ng/mL, 12 ml/rat/day), while controls received drinking water only. Next eight weeks we recorded and measured paw parameters (the lenght between left and right front and back paws) in control, treated and healthy rats. Radiological analysis was also performed. The paw parametars have shown that the front paws in the control group were approximately 35% and the back paws were 13% wider than in helathy rats. Contrarily, the front paws in medicated rats were only 9% and the back paws were only 4% wider than in healthy ones. Radiological assesment of rats spines acquired at 1 week or 8 weeks was conducted and BPC 157 drinking animals had higher bone density overall. BPC 157 improves damage caused by spine instability and it can be potentially used as a treatment for chronic back pain.