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The Effects of Enrofloxacin on Canine Tendon Cells and Chondrocytes Proliferation *in vitro*

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Purpose: This study was performed to investigate the effects of enrofloxacin on canine achilles tendon cell and chondrocyte proliferation, focusing mainly on the question of whether enrofloxacin may induce apoptosis.

Materials and methods: Cell proliferation which was cultured in the different concentration of enrofloxacin was assayed by the colorimetric method. Nuclear apoptotic condensed nuclei found using Hoechst 33258 staining. For detection of apoptotic DNA cleavage, DNA fragmentation assay was performed using DNA fragmentation assay.

Results: Enrofloxacin could inhibit the proliferation of canine tendon cells and chondrocytes at increasing concentrations (10–200 μg/ml). The inhibition of proliferation of canine tendon cells and chondrocytes after exposure to enrofloxacin were associated with induction of apoptosis, as evidenced by the typical nuclear apoptotic condensed nuclei found using Hoechst 33258 staining. Enrofloxacin increased the apoptosis of canine tendon cells and chondrocytes in a dose and time-dependent manner.

Conclusion: The results indicate that enrofloxacin inhibits cell proliferation, induces apoptosis and DNA fragmentation, which might explain enrofloxacin-induced tendinopathy and cartilage damage.

Key words: apoptosis, canine tendon cells, cell proliferation, chondrocytes, enrofloxacin

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