

DEVELOPMENT OF AN INNOVATIVE SCAFFOLD MADE FROM DECELLULARIZED HORSE BONE FOR BONE DEFECTS IN HORSES

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Veterinarians in their practice often encounter bone defects in horses. These are usually associated with past injuries or chronic inflammatory conditions, resulting in cystic changes. One of the most popular composites used in the therapy of bone defects is calcium hydroxyapatite, the main component of bones. Research indicates that granules and blocks of this compound, unfortunately exhibit poor manipulative properties and may have difficulty staying in the operative site. Empty spaces can form between hydroxyapatite and bone tissue, leading to mechanical instability of the bone. In response to this problem, allogeneic bones have become the gold standard in human medicine, but they are not yet available in the veterinary market. The aim of the research was to develop a method for bone decellularization to obtain an antigenically neutral bone filler. The experiments were conducted on horse bones. Initially, bone sections, containing mainly the spongy bone structure, were subjected to enzymatic digestion. Subsequently, they were rinsed to remove residual fats, and in the final step, they were sterilized radiographically. Samples were examined under a microscope. We have successfully developed an effective method of decellularization, ensuring the creation of a safe bone composite for transplantation in horses.
