



# Bone histomorphometry detection of autologous bone powder graft repair of partial mandibular defects in rabbits

J.-Q. Wu<sup>1</sup>, J. Liu<sup>1</sup>, L.-L. Wang<sup>1</sup>, A.-G. Xie<sup>1</sup> and D.-L. Liu<sup>2</sup>

<sup>1</sup>Plastic Surgery Department, 463rd Hospital of PLA, Shenyang, China

<sup>2</sup>Department of Plastic and Reconstructive Surgery, Zhujiang Hospital of Southern Medical University, Guangzhou, Guangdong Province, China

Corresponding author: J.-Q. Wu

E-mail: jqwucn@126.com

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**ABSTRACT.** The aim of this study was to understand the effect of autologous bone powder graft repair of partial mandibular defects of rabbits by the quantitative detection of bone formation. New Zealand rabbits (N = 18) were selected as the test objects, and subjected to bilateral partial mandibular defect induction. One side of the mandibular defect acted as the test group, upon which the autologous bone powder backfilling graft was performed; the other side was put aside and acted as the negative control group. All used an autogenous control. At the twelfth postoperative week, the animals were sacrificed, and semi-automatic image analysis was used to conduct bone histomorphometric detection. Immediately subsequent, quantitative detection of bone formation was performed in the test group. Fluorescent perimeter percent, mineralization apposition rate, and bone formation rate were selected as the dynamic indicators; and trabecular area percent,

trabecular thickness, trabecular number, and trabecular separation degree were selected as the static indicators for single factorial variance testing. It was found that the values of P are less than 0.05 between the test group and the control group, indicating that the effect of autologous bone powder graft repair on partial mandibular defects in rabbits was positive.

**Key words:** Mandibular defect; Graft; Autologous bone powder; Bone histomorphometry