

Cellular Response of Primary Human Line Cultures in Petri's Capsule to Application of Shock Waves

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One of the greater controversies concerning the action mechanisms of Shock Waves is represented by their biological effect on the alive tissues and especially on cells. The comprehension of such effects could be a remarkable step in the knowledge of this technique in order to improve the clinical application and to overhaul the current therapeutic protocols, especially concerning dosages and application fields.

To such purpose the authors have treated a high number of samples of primary line cells: osteoblasts, fibroblasts, cardiac stem cells, hemopoietic stem cells etc. The treatment has been carried out in a Petri's capsule with 800 Shock Waves at an energy level between 0.030 and 0.10 mJ/mm². The cell cultures have been exposed to a single application of Shock Waves and then observed and evaluated in various appearances (modifications of mitotic index, percentage of cellular survival, activation/deactivation of enzymatic chains and metabolic activities) during the following weeks, always comparing the results with the ones in no treated cellular cultures.

The authors report the results achieved and discuss widely about their clinical involves.