Abstract
Biocompatibility is a very complex factor determining each evaluation of health injury. Cytocompatibility has a priority in primary screening tests providing information on the cell biology sensitivity for further analysis. The purpose of biodegradable implants is to support tissue regeneration and healing by material degradation and a concurrent implant replacement through the surrounding tissue. Biodegradable metals have an advantage over existing biodegradable materials in load bearing applications. In particular, metals which consist of human body trace elements are promising candidates for temporary implant materials. Magnesium is one of them. An improvement in mechanical properties and in corrosion resistance of Mg is necessary to ensure a good integrity of temporary implants. These requirements can be fulfilled by means of a proper composition of an Mg alloy and by the treatment leading to nano-sized precipitation structure. Mg alloys envisaged for biodegradable implants are soluble or degradable in bio-solutions, for example in cell cultivation media. Cytocompatibility of Mg alloys with various compositions and microstructures was studied by the time lapse cine micrography. The alloys without cytotoxicity, with cytoreistance and without serious cell damage were found.

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