In vitro method for the diagnosis of cardiovascular functionality of bone marrow precursor cells (BMPs) and/or blood derived circulating precursor cells (BDPs)

Abstract

The present invention relates to an *in vitro* method for the analysis of a sample from a mammal in connection with cardiovascular diseases, wherein the method comprises the following steps: a) isolating of bone marrow-precursor cells (BMPs) and/or blood-derived circulating precursor cells (BDPs) by means of cell specific surface markers, and b) detecting the cardiovascular functionality of the isolated BMPs and/or BDPs by means of a suitable migration assay. The method according to the invention can be employed as a kit in the context of the diagnosis and/or the prognosis of cardiovascular diseases, for the monitoring of their therapies and/or for a stratification for a prospective cell therapy with stem- and/or precursor cells in order to increase the perfusion of ischemic tissue or for a regeneration of tissue losses (e.g. heart insufficiency), respectively. In a further aspect, the present invention then relates to an *in vitro* method for isolating specific bone marrow-precursor cells by means of a suitable migration assay. According to the invention, these BMPs and/or BDPs can be used for the treatment of cardiovascular diseases, selected from the group consisting of stable coronary heart disease, acute coronary syndrome, acute myocardial infarction, chronic ischemic cardiomyopathy (ICMP), dilatative cardiomyopathy (DCM) or other causes for a heart insufficiency.