Abstract

Detection method using recombinant living cells for detecting xenobiotic substances and arrangement and test kit for performing the detection method.

Known detection methods for foreign substances mark gene sequences of living cells and detect, in a spatially resolved manner, the translocation of the stably expressed marked fusion constructions within the recombinant cells under the influence of foreign substance. The detection method according to the invention utilizes the dynamic expression behavior of recombinant living cells and detects in an integral manner. The cell-inherent defense system is preferably used, wherein gene sequences a_i-m_i in recombinant cells (19) as a preferred means in a test kit for performing the detection method code for transporter proteins A_i comprising fluorescent marker proteins M_i as fusion constructs A_i-M_i. The cell-inherent defense system is activated under the influence of foreign substance. Transporter proteins A_i that transport the foreign substance out of the living cells (19) are expressed in an increased manner. Together with the transporter proteins A_i, the marker proteins M_i are also expressed in an increased manner, which is optically detected and enables corresponding conclusions about the foreign substance (03). The detection method is preferably implemented by means of an arrangement (04) of genetically modified aquatic organisms (06) or living cells (19) thereof, which are permanently exposed in a water-permeable habitat tank (05) in an aquatic system (01) in the vicinity of a technical installation (02).

[Fig. 1]