

Title (en)  
TUMOR DETECTION BY IMAGING AND THERAPY OF TUMORS

Title (de)  
TUMORERKENNUNG DURCH BILDERZEUGUNG UND TUMOR-THERAPIE

Title (fr)  
DETECTION DE TUMEURS PAR IMAGERIE ET LEUR TRAITEMENT

Publication  
**EP 1221977 A2 20020717 (EN)**

Application  
**EP 00969788 A 20001020**

Priority

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Abstract (en)  
[origin: WO0128594A2] A method for detecting or monitoring tumor cells in an individual is provided which is based on routinely used imaging techniques such as magnetic resonance imaging (MRI) and ultrasound techniques. The detection and monitoring of the cells is carried out non-invasively by externally monitoring the level of oxygenation of the cells (measured as BOLD images) and blood flow to the cells (measured by Doppler ultrasound) in a tested tissue of the individual. The method may be used to identify regions in an individual that does not have a pre-known tumorigenic lesion as well as to detect regions having a high probability of comprising cells in a pre-suspected lesion of an individual (which may, for example be a region in where there is a high probability of existence of primary tumor cells based on analysis by routinely used methods). The method comprises use of an agent which administration to the individual or contact with the cells results in enhancement of the oxygen consumption of the cells detectable by the various imaging techniques. The activating agent may, for example, activate the cells by binding to a receptor specifically expressed by the cells. In addition, methods for evaluating the efficacy of anti-tumorigenic treatments based on measuring blood oxygenation levels and blood flow levels to the cells by imaging techniques are also provided. Furthermore, methods for enhancing the efficacy of anti-tumorigenic therapeutic treatments including chemotherapeutical drugs, antibodies, and irradiation treatments are provided which involve administration to the treated individual of an amount of an agent which enhances the oxygenation of the target cells and the blood flow to the target cells in the treated individual. The efficacy of chemical contrast agents used in conjunction with MRI or ultrasound is also enhanced by the provided method.

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