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**(54) Title (EN):** METHOD FOR ASSESSING IMMUNITY AND PROVIDING INFORMATION ON WHETHER OR NOT THE ONSET OF CANCER HAS BEGUN BY UTILIZING DIFFERENCE IN IMMUNE CELL DISTRIBUTION BETWEEN PERIPHERAL BLOOD OF COLORECTAL CANCER PATIENT AND NORMAL PERSON, AND DIAGNOSTIC KIT USING SAME

**(54) Title (FR):** PROCÉDÉ POUR ÉVALUER L'IMMUNITÉ ET FOURNIR DES INFORMATIONS CONCERNANT L'APPARITION D'UN CANCER PAR L'UTILISATION D'UNE DIFFÉRENCE DE DISTRIBUTION DES CELLULES IMMUNITAIRES ENTRE LE SANG PÉRIPHÉRIQUE D'UN PATIENT ATTEINT D'UN CANCER COLORECTAL ET CELUI D'UNE PERSONNE NORMALE, ET KIT DE DIAGNOSTIC L'UTILISANT

**(54) Title (KO):** 대장 직장암 환자와 정상인의 말초혈액 내 면역세포의 분포 차이를 이용하여 면역력을 평가하고 암 발병 유무에 대한 정보를 제공하는 방법 및 이를 이용한 진단키트

**(57) Abstract:**

**(EN):** Provided according to the present invention is a method for assessing immunity of peripheral blood and providing information on whether or not the onset of colorectal cancer has begun by utilizing a difference in immune cell distribution between peripheral blood of colorectal cancer patients and normal persons, the method comprising the steps of: (A) analyzing peripheral blood immune cells for cell size and wrinkle degree to classify the cells into lymphocytes, monocytes, and granulocytes; (B) staining a labeling marker of the three kinds of immune cells with at least one antibody combination to analyze the distribution of immune cells in peripheral bloods of cancer patients and normal persons; (C) discriminating sets in which meaningful result values of the labeling marker are different between the two groups, cancer patients and normal persons, with statistical significance, so as to discriminate whether or not the onset of cancer has begun among cancer patients and normal persons; and (D) measuring immunity per unit of blood by means of the labeling marker to diagnose whether or not the onset of colorectal cancer has begun, without counting natural killer cells with a flow cytometer or a cell counter.

**(FR):** La présente invention concerne un procédé pour évaluer l'immunité du sang périphérique et fournir des informations sur l'apparition ou non d'un cancer colorectal par l'utilisation d'une différence de distribution de cellules immunitaires entre le sang périphérique de patients atteints d'un cancer colorectal et celui de personnes normales, le procédé comprenant les étapes consistant à : (A) analyser les cellules immunitaires du sang périphérique en termes de taille des cellules et de degré de rides pour classer les cellules en lymphocytes, monocytes et granulocytes ; (B) colorer un marqueur de marquage des trois types de cellules

immunitaires avec au moins une combinaison d'anticorps pour analyser la distribution des cellules immunitaires dans des sangs périphériques de patients cancéreux et de personnes normales ; (C) différencier des ensembles dans lesquels les valeurs de résultat significatives du marqueur de marquage sont différentes entre les deux groupes de patients cancéreux et de personnes normales, avec une signification statistique, de façon à déterminer si l'apparition d'un cancer a eu lieu ou non parmi des patients cancéreux et des personnes normales ; et (D) mesurer l'immunité par unité de sang au moyen du marqueur de marquage pour diagnostiquer l'apparition d'un cancer colorectal, sans compter les cellules tueuses naturelles avec un cytomètre de flux ou un compteur de cellules.

**(KO):** 본 발명에 의하면 대장 직장암 환자와 정상인의 말초혈액 내 면역세포의 분포 차이를 이용하여 말초혈액의 면역력을 평가하고 이를 이용해 대장 직장암 발병 유무에 대한 정보를 제공하는 방법에 있어서, (A) 말초혈액 면역세포의 중 세포 크기 및 주름진 정도를 분석해 림프구세포(lymphocytes), 단핵구세포(monocytes), 및 과립구(granulocytes)를 분류하는 단계; (B) 적어도 하나의 항체 조합으로 상기 세 종류의 면역세포의 표지 마커를 염색하여 암환자와 정상인의 말초혈액 내 면역세포의 분포를 분석하는 단계; (C) 암환자와 정상인 사이에서 암 발생 유무를 판별할 수 있도록 암환자와 정상인 두 집단에서 유의미한 표지 마커의 결과 값이 통계적 유의성을 보이면서 차이가 나는 조합을 판별하는 단계; 및 (D) 상기 표지 마커를 이용해 유세포분석기나 세포 계수기 등을 이용한 자연살해 세포의 계수 없이도 단위 혈액당 면역력을 측정하여 대장 직장암 발병 유무를 진단하는 단계를 포함하는 방법이 제공된다.

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