

В.В. ДМИТРЕНКО и др. «ОПРЕДЕЛЕНИЕ МОЛЕКУЛЯРНЫХ ПОДКЛАССОВ ...»

<http://cytgen.com/articles/4860045s.pdf>

**Таблица 2. Функциональная характеристика белковых продуктов генов, дифференциально экспрессирующихся между двумя группами глиобластом**

Номер пробы на микроаррейной платформе	Название гена и функция белкового продукта (данные на сайте <a href="http://www.ncbi.nlm.nih.gov/gene">http://www.ncbi.nlm.nih.gov/gene</a> )	Участие белка в клеточном процессе	Соотношение экспрессии гена в группе 1 по сравнению с группой 2	Вероятность
NM_018492	<i>PBK</i> (PDZ binding kinase). This gene encodes a serine/threonine protein kinase related to the dual specific mitogen-activated protein kinase kinase (MAPKK) family. Also known as T-LAK cell-originated protein kinase; cancer/testis antigen 84; lymphokine-activated killer T-cell-originated protein kinase; serine/threonine protein kinase; spermatogenesis-related protein kinase. Overexpression of this gene has been implicated in tumorigenesis	Mitosis, protein phosphorylation	2,012	$1,15 \cdot 10^{-9}$
NM_014791	<i>MELK</i> (maternal embryonic leucine zipper kinase). Neural precursor cell proliferation	G2/M transition of mitotic cell cycle	2,024	$2,4 \cdot 10^{-9}$
NM_001168	<i>BIRC5</i> (baculoviral IAP repeat containing 5/ apoptosis inhibitor survivin). This gene is a member of the inhibitor of apoptosis (IAP) gene family, which encode negative regulatory proteins that prevent	G2/M transition of mitotic cell cycle	2,024	$8,7 \cdot 10^{-4}$

	apoptotic cell death. Gene expression is high during fetal development and in most tumors, yet low in adult tissues			
NM_000077	<i>CDKN2A</i> (cyclin-dependent kinase inhibitor 2A). At least three alternatively spliced variants encoding distinct proteins have been reported, two of which encode structurally related isoforms known to function as inhibitors of CDK4 kinase ARF product encoded by this gene, through the regulatory roles of CDK4 and p53 in cell cycle G1 progression, share a common functionality in cell cycle G1 control	G1/S transition of mitotic cell cycle, cell cycle checkpoint	2,087	$8,95 \cdot 10^{-4}$
NM_003979	<i>GPRC5A</i> (G protein-coupled receptor, family C, group 5, member A). This gene may play a role in embryonic development and epithelial cell differentiation	Signal transduction	2,132	0,0423
L16895	<i>LOX</i> (lysyl oxidase). The protein encoded by this gene is an extracellular copper enzyme that initiates the crosslinking of collagens and elastin. Lysyl oxidase plays a critical role in endothelial cell stimulation to drive tumor angiogenesis	Blood vessel development, collagen fibril organization	2,179	0,00138
NM_002610	<i>PDK1</i> (pyruvate dehydrogenase kinase, isozyme 1). Phosphorylation of pyruvate dehydrogenase (PDH) - mitochondrial multienzyme complex that catalyzes the oxidative decarboxylation of pyruvate and is one of the major enzymes responsible for the regulation of homeostasis of carbohydrate fuels in mammals.	Cell proliferation, hypoxia-inducible factor-1 alpha signaling pathway	2,188	0,000416

	Phosphorylation of PDH by a specific pyruvate dehydrogenase kinase (PDK) results in inactivation			
AL524035	<i>CDK1</i> (CDK1 – cyclin-dependent kinase 1). The protein encoded by this gene is a member of the Ser/Thr protein kinase family. This protein is a catalytic subunit of the highly conserved protein kinase complex known as M-phase promoting factor (MPF), which is essential for G1/S and G2/M phase transitions of eukaryotic cell cycle	G1/S transition of mitotic cell cycle, G2/M transition of mitotic cell cycle	2,203	$2,47 \cdot 10^{-7}$
NM_002358	<i>MAD2L1</i> (MAD2 mitotic arrest deficient-like 1). <i>MAD2L1</i> is a component of the mitotic spindle assembly checkpoint that prevents the onset of anaphase until all chromosomes are properly aligned at the metaphase plate	Mitotic spindle assembly checkpoint, negative regulation of apoptotic process	2,208	$1,05 \cdot 10^{-9}$
NM_018455	<i>CENPN</i> (centromere protein N) The protein encoded by this gene forms part of the nucleosome-associated complex and is important for kinetochore assembly. It is bound to kinetochores during S phase and G2 and recruits other proteins to the centromere	Chromosome segregation, nucleosome assembly	2,262	$2,73 \cdot 10^{-9}$
AL008627	Unknown (Human DNA sequence from clone RP1-130G2 on chromosome 6p22.2-22.3, complete sequence)		2,299	$9,53 \cdot 10^{-9}$
NM_021127	<i>PMAIP1</i> (phorbol-12-myristate-13-acetate-induced protein 1). Also known as APR or NOXA	Apoptotic process, cellular response to hypoxia	2,475	0,0111

NM_001827	<i>CKS2</i> (CDC28 protein kinase regulatory subunit 2). <i>CKS2</i> protein binds to the catalytic subunit of the cyclin dependent kinases and is essential for their biological function	Cell division, cell proliferation	2,494	$2,37 \cdot 10^{-6}$
AW007751	<i>YME1L1</i> (YME1-like 1 ATPase) The protein encoded by this gene is the human ortholog of yeast mitochondrial AAA metalloprotease, Yme1p. It is localized in the mitochondria and can functionally complement a yme1 disruptant yeast strain	Cell proliferation, mitochondrion organization	2,639	0,016
X72501	<i>TCRD</i> (T cell receptor delta chain)	Signal transduction	2,882	0,008