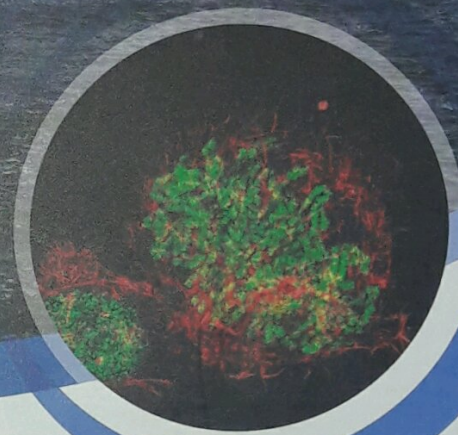


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Isabek, A.	P 318	Kalabova, D.	P 251	Klusevich, Y.	P 309
Ishida, Y.I.	P 347	Kalailingam, P.	P 158	Kmiotek, K.	P 152, P 227
Ishikawa, T.	O 039	Kalaso, I.	P 209	Knedlik, T.	P 088
Ishov, A.	O 112	Kalendova, A.	P 209	Knobl, P.	P 221
Isobe, S.Y.	O 075	Kalimagambetov, A.	P 318	Kobayashi, I.	P 264, P 040, P 319
Itzhak, D.	O 012	Kalman, S.	O 053	Kocanova, S.	O 122
Iurchenko, L.	P 184	Kaneno, R.	P 216	Kockova, H.	P 061
Ivanova, E.	P 141	Kang, H.J.	P 307	Kockova, L.	O 173
Iwasawa, T.	P 278	Kanno, T.	P 086	Kodet, O.	O 101
Iyer, K.V.	O 147	Kantorova, B.	P 061	Kodjabachian, L.	P 328
Izbirak, A.	P 188	Kapell, T.	O 105	Kohagen, M.	P 175
Izu-Belloso, R.	P 015	Kapinos, L.E.	O 114	Kohl, A.	O 096
Jacobs, H.	IL 21	Kapoor, U.	O 171	Kohoutek, J.	P 012, P 220
Jacquemet, G.	P 144	Kapranov, N.	P 072	Kohutova, A.	O 063
Jager, A.	P 303	Kapusta, M.	P 151	Kolar, M.	O 101, O 102, P 260
Jager, E.	P 303	Karkowska-Kuleta, J.	P 197	Kolar, Z.	P 056
Jagiello, J.	P 229	Karlic, R.	O 165	Koledova, Z.	O 103
Jahnel, M.	O 092	Karlsson, R.	P 149	Kolenko, P.	P 074
Jain, A.K.	P 316	Karnas, E.	P 045, P 227, P 229	Kolesinski, P.	P 370
Jain, M.	O 145	Karteris, E.	O 143	Kolokoltsova, T.	P 267
Jain, N.	P 157	Kashuba, V.	P 348	Kolostova, K.	P 008
Jakobkiewicz-Banecka, J.	P 076, P 324	Kasperek, P.	P 244, P 226, P 392	Koltsova, A.	P 224
Jamieson, C.	O 083	Kasprzyk, I.	P 024	Kolumbayeva, S.	P 366
Jamir, I.	P 353	Kaulich, M.	P 101	Komianos, J.	P 165
Jana, S.	O 023	Kaur, M.	P 107	Komis, G.	O 037, O 160, P 369, P 371
Jang, H.J.	P 307	Kautzner, J.	O 175	Kong, M.	P 299
Jang, W.H.	P 127	Kavalkova, P.	O 177	Konig, J.	P 154
Jannasch, A.	O 105	Kazokaite, J.	P 247	Konirova, J.	P 230
Janouskova, H.	P 245	Keegan, L.	O 170	Konno, T.	P 162, P 277
Janovjak, H.	O 121	Kehlenbach, R.	O 083	Kononenko, O.	P 348
Janssen, H.	P 123	Kepten, E.	P 356	Konopasek, I.	P 255
Jantsch, M.	O 171	Kereiche, S.	O 111, P 242	Konvalinka, J.	P 052, P 088, P 139, P 226, P 392
Jantsch, M.F.	O 145	Kestav, K.	P 241	Koo, G.B.	P 059
Jaros, J.	P 051, P 301	Khalaf, B.	P 383	Kopitar-Jerala, N.	P 065
Jawerth, L.	O 092	Khalaji, S.	P 121	Koralkova, P.	O 104
Jeannot, P.	O 055	Khamdiyeva, O.	P 050	Kordyum, E.	P 367
Jedruszewska, G.	P 152	Khan, M.H.	P 144	Korkmaz, E.	P 078
Jeong, E.M.	P 167	Khan, M.M.	P 107	Kosek, D.	P 249, P 243
Jiang, S.	P 006	Kharchenko, V.	P 039	Koseki, H.	O 018
Jimenez-Garcia, L.F.	P 213	Khodorkovskii, M.	P 135, P 141	Koseska, A.	O 118
Jindrova, Z.	P 263	Khramova, Y.	P 266	Koshel, E.	P 210
Jirkovska, M.	O 176	Khudiakov, A.	O 069	Kosheleva, N.	P 120, P 267
Jirouskova, M.	P 146	Kidoya, H.	P 087, P 269	Kostal, V.	P 301
Jirsa, M.	P 095	Kikvidze, M.	P 327	Kostareva, A.	O 069
Joana Alves, M.	P 049	Kill, I.	O 143	Kostelanska, M.	P 394
Joannas, L.	O 012	Kim, I.	P 282	Kostina, D.	O 069
Jockusch, H.	O 178	Kim, I.S.	P 075	Kostka, L.	P 139
Joffre, C.	O 055	Kim, J.E.	P 271	Kotake, Y.	P 363
Joly, N.	O 045	Kim, J.H.	P 092, P 273, P 279, P 307	Kotlabova, K.	P 070
Jones, A.	O 149	Kim, J.Y.	O 053	Koutna, I.	O 064, O 070
Jonsson, K.I.	P 397	Kim, M.J.	P 307	Koutová, M.	P 398
Jorda, R.	P 019, P 117	Kim, R.K.	P 307	Kouznetsov, N.	P 350
Jorge, L.	P 214	Kim, Y.S.	P 059	Kovacic, L.	O 111, P 242
Joshi, V.	P 398	Kimura, E.T.	P 028	Koval, T.	P 074
Jost, L.	P 208, P 360	Kimura, H.	O 075, P 357	Kovarikova, A.	P 178
Juda, P.	P 126, P 317	Kindermann, M.	O 154, P 306	Kozak, J.	P 398
Juda, P.	P 204	Kioka, N.	P 290	Kozhina, K.	P 120
Juhas, S.	O 066	Kipryushina, Y.	P 274	Kozik, A.	P 197
Julicher, F.	O 092, O 120, O 147, P 399	Kiselev, A.	P 333	Kozik, P.	O 012
Jung, S.	P 073	Kisurina-Evgenieva, O.	P 284	Koziol, K.	P 354
Jung, S.C.	P 271	Kitanaka, N.	P 162	Kozubek, S.	P 177, P 179
Jungwirth, P.	P 175	Kitanaka, T.	P 162	Kracmarova, M.	P 009
Jurakova, T.	O 063	Kizenko, A.	P 094	Krahn, M.P.	P 237
Jurasek, M.	P 048	Kirac, E.	P 281	Kral, V.	P 364
Justulin Jr., L.A.	P 216, P 257	Klamova, H.	P 034	Kralova, J.	P 070, P 364
Juzova, V.	P 080	Klebanovych, A.	P 150	Kramer, A.	P 235
Ka, D.	P 250	Klein Secundes, M.	P 142	Krasinska, L.	O 073
Kachynski, A.	O 125	Klein, F.	P 182	Krat, V.	P 106
Kaczynska, M.	P 045	Klein, O.	P 244	Kratochvilova, K.	P 288
Kadziolka, D.	P 152	Klein, P.	P 272, P 320	Kravchuk, I.	P 026
Kaganovich, D.	O 034	KleinJan, F.	P 121	Krchnakova, Z.	P 361
Kagawa, N.	O 047	Klempir, J.	P 332	Krejci, E.	O 102
Kagiwada, S.	P 130	Klimova, N.	P 253	Krejci, K.	P 301
Kaid, C.	P 047	Klinkert, K.	O 089	Krejci, L.	O 076, P 182
Kaidi, A.	P 183	Klouckova, J.	O 177	Kremerskothen, J.	P 171
Kairys, V.	P 247	Klumb, C.E.	P 044	Kremneva, E.	P 144



P 050 - Development of the Genetic Marker Panels for an Early Diagnosis of Lung Cancer in Kazakhstan

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In the list of causes of death rates in Kazakhstan oncological diseases ranks second. The situation is caused by the fact that most tumors are detected in the latest stages of disease because of the fact that early diagnosis isn't popular among the population. For introducing the latter it is necessary to identify the most common mutation in Kazakhstan. In this connection the aim of our study is to developing the panel of genetic markers for an early diagnosis of lung cancer in Kazakhstan.

The study is being performed on a cohort of the lung cancer patents from Almaty city and its vicinity diagnosed and underwent treatment at the Almaty Oncology Center. A panel of the major lung cancer susceptibility and driver genes including EGFR, KRAS, ALK, HER-2/*neu*, FGFR1, PIK3CA, ROS-1, c-MET, BRAF, and BORIS was selected in order to detect EGFR, KRAS germline genomic polymorphisms by PCR with subsequent analysis of RFLP (Restriction Fragment Length Polymorphism), gene deregulation in the tumors by detecting gene/chromosome rearrangements, amplification events by FISH (Fluorescence *In Situ* Hybridization) and gene upregulation at the protein level by IHC (Immunohistochemistry). The lung cancer TMA (Tissue MicroArray) from Kazakhstan was constructed and analyzed in the FISH and IHC studies. The results of the Molecular Profiling study of the lung cancer from Kazakhstan will be presented.

P 051 - Nuclear Localization of CD133 Plasma Membrane Glycoprotein in Sarcoma Cells

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CD133 is a cell surface glycoprotein that is widely used for the identification of stem cells. Furthermore, its glycosylated epitope, AC133, has recently been discussed as a marker of cancer stem cells in various human malignancies. During our recent experiments on rhabdomyosarcomas (RMS), we unexpectedly identified an atypical nuclear localization of CD133.

We analyzed the nuclear localization of CD133 using 5 RMS cell lines in a detailed study. First, we employed three independent anti-CD133 antibodies (both rabbit polyclonal and mouse monoclonal) for indirect immunofluorescence. Furthermore, confocal microscopy followed by software cross-section analysis, transmission electron microscopy and cell fractionation with immunoblotting were used for verification and results undeniably confirmed the presence of CD133 in the nuclei of stable minor subpopulations (from 3,4 to 7,5%) of RMS cell lines.

Thereafter, the same nuclear localization was confirmed also in two other types of sarcomas: Ewing's sarcoma and osteosarcoma. Although the roles of CD133 in the cell nucleus remains unclear, our results indicate that this atypical nuclear localization of CD133 in a minor subpopulation of cancer cells is a common phenomenon in sarcoma cell lines.

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