**Supplementary Table**

**Table S1.** Molecular pathways related to VM process in human osteosarcoma, their recognized predominant functions and available literature data concerning their evaluations in canine tumor cells and tissues.

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| --- | --- | --- |
| **Molecular pathways of VM in hOSA** | **Main functions** | **Investigations in canine tumour cells and tissues** |
| CD133 | **Stem cell marker**; cell motility (1). | OSA(2), glioma (3), melanoma (2), hepatocellular carcinoma (4,5), B-cell lymphoma (6), granular cell tumour (7), insulinoma CSC-like cells (8), prostate cancer cells (9), lung adenocarcinoma (10), hemangiosarcoma (11), transitional cell carcinoma (12), mammary gland adenocarcinoma (13). |
| ALDH1 enzymatic activity | **Stem cell marker**; detoxification of endogenous and exogenous aldehyde substrates; self-renewal, differentiation and self-protection (14). | OSA, haemangiosarcoma, lymphoma, acute lymphoblasticleukaemia (15), melanoma (16), mammary carcinoma (17). |
| VE-cadherin | **Endothelial mediator**;intercellular adhesión (18), vascular homeostasis (19), EMT (20). | OSA (21), mammary tumors (22), thyroid carcinoma, perianal gland epithelioma (23). |
| VEGF/VEGFR | **Endothelial mediator**; vascular homeostasis (24). | OSA (25-30), mammary tumours (31-34), mast cell tumour (35,36), lymphoma (37), perivascular wall tumours (38), hemangiosarcoma (39), skin tumours (40,41), prostate cancer (42). |
| PDGF/PDGFR | **Endothelial mediator**; vascular homeostasis (43). | OSA (44,45–47), astrocytoma (48), fibrosarcoma (49), squamous cell carcinoma (50), lymphoma (51), prostate cancer (52), hemangioma and hemangiosarcoma (53), melanoma (54), mast cell tumors (55), hepatocellular carcinoma (56), mammary tumours (57), nervous system tumors (58,59). |
| FAK | **Response to ECM environment and cell adhesion**; adhesion to the extracellular matrix, cell survival, proliferation and migration (60), EMT (61). | OSA (62), hemangiosarcoma (63), mammary gland tumour (64). |
| Mig7 | **Response to ECM environment and cell adhesion**; adhesion to the extracellular matrix, cell migration (65). | - |
| MMP1, MMP2,  MMP9 | **Response to ECM environment and cell adhesion**; adhesion to the extracellular matrix, cell migration, apoptosis, immunity and angiogenesis (66). | OSA (67–70,30), mast cell tumour (71), lymphoma (72), mammary tumours (73), chondrosarcoma (74), oronasal tumors, hemangiosarcomas, meningiomas (75). |
| Integrins | **Response to ECM environment and cell adhesion**; adhesion to the extracellular matrix, regulation of the actin cytoskeleton, cell adhesion and migration, anchorage-independent growth, EMT (76). | OSA (77), mammary tumors and lymph node metastases (78,79), cutaneous histiocytoma (80), hemangiosarcoma cell lines (81-83) |
| EphA2 | **Response to ECM environment and cell adhesion**; cell motility, angiogenesis (84); virus receptor (85). | OSA (86), high-grade gliomas (87,88), prostate carcinoma cell lines derived from lung and bone metastases (89). |
| mTOR pathway | Cell homeostasis, proliferation and migration (90); HIF-1α stabilizer (91). | OSA (92), hemangiosarcoma (93), prostate cancer (94), mammary tumors (95,96), melanoma (97), mast cell tumors (98). |
| RhoA/ROCK | Cell migration, cell adhesion, EMT and virus entry (99–102). | - |
| lncRNAs | Regulation of various biological and pathological processes. | HOTAIR and MALAT1 in B cell lymphoma (103,104), ZEB2-AS, SOX21-AS1 and CASC15 in oral melanomas (105), TERRA in soft tissue sarcoma cell line (106). |

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