Immunohistochemistry

Immunohistochemistry on Sarcomas

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Sarcomas originate from cells of the mesenchymal supporting tissue and are therefore not limited to one organ or part of the body. The most common subgroups include liposarcomas and leiomyosarcomas (www.krebsdaten.de). Sarcomas can be caused by various risk factors, including genetic predisposition, radiation exposure, certain chemicals and viral infections such as human herpesvirus 8 (HHV-8) and Epstein-Barr virus (EBV). It is important to undergo regular screenings and minimize risk factors to reduce the risk of sarcoma.

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The differentiation of well-differentiated liposarcomas (WDLPS) and dedifferentiated liposarcomas (DDLPS) from benign adipose tumors or other poorly differentiated sarcomas is often morphologically difficult.



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MDM2 (clone 3G187/IF2), Liposarcoma

CDK4 and MDM2

Binh *et al.* **[1, 2]** describe the immunohistochemical detection of CDK4 and MDM2 overexpression as very useful and reproducible in the diagnosis of ALT/WDLPS and dedifferentiated liposarcomas. According to Weaver *et al.* **[3]**, MDM2 overexpression is also a sensitive marker for differentiating liposarcomas from sclerosing mesenteritis and retroperitoneal fibrosis.

MDM2 amplification in different tissues

Tissue	Frequency of MDM2 amplification			
Atypical lipomatous tumors/ well-differentiated liposarcomas (ALT/WDLS)	~ 100 %			
Dedifferentiated liposarcomas	~ 100 %			
Pleomorphic liposarcomas	~ 40 %			
Benign lipomatous lesions	0 %			

CD99: Synaptophysin or NKX2.2

For the diagnosis of Ewing sarcoma, a rare malignant tumor with an annual incidence of around 0.15/100,000 people (Onkopedia), the guideline (S1 guideline Ewing sarcoma of childhood and adolescence, version 8, valid until 2026) recommends CD99 in combination with another neural marker, namely synaptophysin. A study by Pasricha *et al.* shows that a combination of CD99 and NKX2.2 in immunohistochemistry can eliminate or minimize the need for molecular testing for EWSR1 gene rearrangement for the diagnosis of Ewing sarcoma due to the high sensitivity and specificity of NKX2.2. In their publication, Specht and Hartmann generate a flow chart to differentiate Ewing sarcoma from Ewing-like sarcoma. The importance of NKX2.2 for the prediction of a rearrangement of the EWSR1 gene is also made clear here. [5,6]

HHV-8

As a multilocular vascular disease, Kaposi's sarcoma can affect the skin and mucous membranes as well as the lymphatic system and internal organs (e.g. gastrointestinal tract, lungs or liver). An infection with HHV-8 is regarded as the probable triggering cause of this rare, malignant vascular disease. The latent nuclear antigen (LNA-1, LNA, LANA-1), a protein with a molecular weight of 222-234 kDa, is used for immunohistochemical detection of Kaposi's sarcoma using anti-HHV-8 antibodies.

https://register.awmf.org/de/leitlinien/detail/032-025



Ki-67 (clone K-2), Liposarcoma

Ki-67 clone K-2: marker for lipoblasts

Miller **[4]** describes the use of the Ki-67 antibody, clone K-2, as a marker for lipoblasts and liposarcomas. In addition to the usual Ki-67 reaction in the nuclei of proliferating cells, this antibody also shows a cytoplasmic reaction in lipoblasts. No reaction was observed in "pseudolipoblasts" in cases of inflammatory myxohyaline tumors and fat necrosis.



Zytomed Systems offers you this Ki-67, clone K-2 to complement your antibody panel for liposarcoma.

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Product information

Description	Clone	Host	Form	Dilution	Amount	Status	Order no.
CDK4 Zeta Corporation	ZR394	Rabbit	Concentrate	1:100-1:200	0,1 ml	RUO	Z2750RT-R
	ZR394	Rabbit	Concentrate	1:100-1:200	0,5 ml	RUO	Z2750RS-R
	ZR394	Rabbit	Concentrate	1:100-1:200	1,0 ml	RUO	Z2750RL-R
	ZR394	Rabbit	Ready-to-use	-	7 ml	RUO	Z2750RP-R
Cdk4 (Cyclin dependent Kinase)	DCS-31.2	Mouse	Concentrate	1:100 - 1:250	100 µg	RUO	603-1840
Mouse anti-HHV-8 (Human Herpes Virus 8)	13B10	Mouse	Concentrate	1:50 - 1:200	0,5 ml	CE/IVD	MSK085-05
Zytomed Systems	13B10	Mouse	Ready-to-use	-	6 ml	CE/IVD	MSG085
MDM2 (Murine Double Minute 2) Zytomed Systems	3G187	Mouse	Concentrate	1:100 - 1:500	50 µg (0,1 ml)	RUO	113-0230
MDM2 (Murine Double Minute 2)	SMP14	Mouse	Concentrate	1:50 - 1:100	0,1 ml	CE/IVD	Z2189MT
	SMP14	Mouse	Concentrate	1:50 - 1:100	0,5 ml	CE/IVD	Z2189MS
	SMP14	Mouse	Concentrate	1:50 - 1:100	1 ml	CE/IVD	Z2189ML
	SMP14	Mouse	Ready-to-use	-	7 ml	CE/IVD	Z2189MP
	K-2	Mouse	Concentrate	1:200 - 1:400	0,5 ml	CE/IVD	MSK018-05
Mouse anti-Ki-67	K-2	Mouse	Concentrate	1:200 - 1:400	1 ml	CE/IVD	MSK018
Zytomed Systems	K-2	Mouse	Ready-to-use	-	6 ml	CE/IVD	MSG018
	K-2	Mouse	Ready-to-use	-	16 ml	CE/IVD	BMS009
Rabbit anti-Synaptophysin	polyclonal	Rabbit	Concentrate	1:200 - 1:400	0,5 ml	CE/IVD	RBK011-05
	polyclonal	Rabbit	Concentrate	1:200 - 1:400	1 ml	CE/IVD	RBK011
Zytomed Systems	polyclonal	Rabbit	Ready-to-use	-	6 ml	CE/IVD	RBG011

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All pictures: © Zytomed Systems

Please note that the use of a non-CE/IVD labeled reagent results in an LDT. This must be validated by the user in order to meet the regulatory requirements of Regulation (EU) 2017/746 on in vitro diagnostic medical devices (IVDR).

Literature

- [1] Binh MB et al. Am J Surg Pathol, 29:1340-1347, 2005
- [2] Binh MB *et al*. Am J Clin Pathol, 125:693-697, 2006
- [3] Weaver J et al. Mod Pathol 22:66-70, 2009
- [4] Miller RT. ProPath: The Focus Immunohisto-chemistry (Newsletter), February 2005
- [5] Pasricha S et al. Indian Journal of Pathology and Microbiology 66: 58-62, 2023
- [6] Specht, K., Hartmann, W. Pathologe 39: 154-163, 2018

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