14es journées annuelles du
GSF–GETO
20, 21 & 22 juin 2018
LE CORUM, PALAIS DES CONGRÈS, MONTPELLIER, FRANCE

GROUPE SARCOME FRANÇAIS
Les journées annuelles

Session « Quoi de neuf ? »
Faits marquants de l'année

Anatomie Pathologique (tissus-mous)

Nicolas MACAGNO
Marseille, Timone

Mercredi 20 juin 2018

HOT TOPICS

Grading des tumeurs fibreuses solitaires

Nouvelles entités / localisations :
- **SMARCA4-déficiente**
- **GLI1**
- **NUT**

Utilité de H3K27me3

Screening de NTRK

Risk assessment in solitary fibrous tumors: validation and refinement of a risk stratification model

Elizabeth G Demicco[1], Michael J Wagner[2], Robert G Maki[3,4], Vishal Gupta[5], Ilya Iofin[6], Alexander J Lazar[7] and Wei-Lien Wang[7]
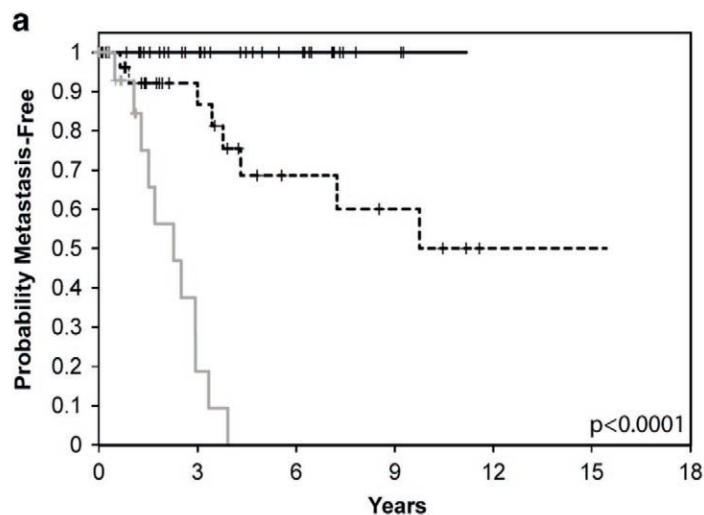
AGE, TAILLE, MITOSES, NECROSE

Trois groupes à « risque » de métastase :
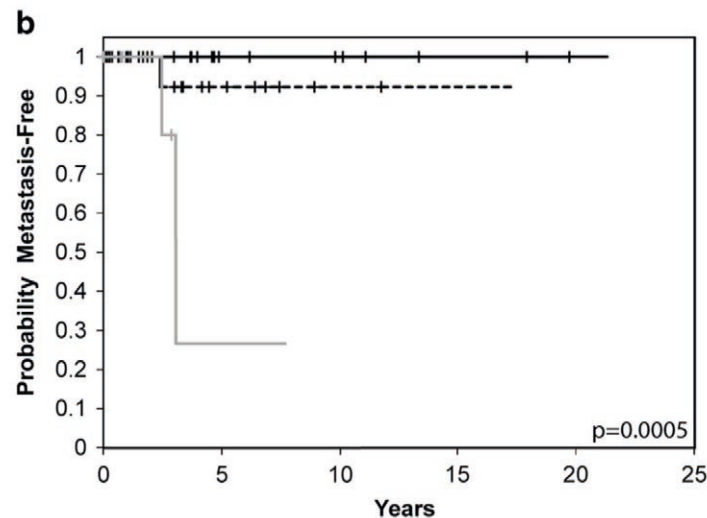Bas, intermédiaire, Haut risque

Risk assessment in solitary fibrous tumors: validation and refinement of a risk stratification model

Elizabeth G Demicco[1], Michael J Wagner[2], Robert G Maki[3,4], Vishal Gupta[5], Ilya Iofin[6], Alexander J Lazar[7] and Wei-Lien Wang[7]

82 patients, médiane FU = 44 mois

PubMed
28731041

GRADING TFS

Grading of Meningeal Solitary Fibrous Tumors/Hemangiopericytomas: Analysis of the Prognostic Value of the Marseille Grading System in a Cohort of 132 Patients

Nicolas Macagno[1,2,*] and Rob Vogels[3,4*], Romain Appay[1,2], Carole Colin[2], Karima Mokhtari[5], French CNS SFT/HPC Consortium[6], Dutch CNS SFT/HPC Consortium[7], Benno Küsters[3,8], Pieter Wesseling[9,10], Dominique Figarella-Branger[1,2], Uta Flucke[3,10], Corinne Bouvier[1,2]

132 patients

MITOSES, NECROSE

Trois groupes à « risque » de métastase :
Bas, intermédiaire, Haut risque

GRADING TFS

WHO	MGS 2012 [23]	Updated MGS
Grade I *"SFT phenotype"* Alternation of hypo- and hypercellular areas Abundant collagen Mitotic activity < 5 /10 HPF*	**MGS I** Mitotic activity ≤ 5 /10 HPF * No necrosis No hypercellularity	**MGS I** Mitotic activity <5 /10 HPF * *(independent of necrosis)*
Grade II *"HPC phenotype"* Hypercellularity Mitotic activity < 5 /10 HPF*	**MGS IIa** Mitotic activity ≤ 5 /10 HPF * No necrosis Hypercellularity **MGS IIb** Mitotic activity > 5 /10 HPF * No necrosis	**MGS II** Mitotic activity ≥5 /10 HPF * No necrosis
Grade III Mitotic activity ≥5 /10 HPF*	**MGS III** Mitotic activity > 5 /10 HPF * *and* Necrosis *and* Hypercellularity	**MGS III** Mitotic activity ≥5 /10 HPF * *and* Necrosis

SMARCA4-deficient thoracic sarcoma: a distinctive clinicopathological entity with undifferentiated rhabdoid morphology and aggressive behavior

Jennifer L Sauter[1,4], Rondell P Graham[1], Brandon T Larsen[2], Sarah M Jenkins[3], Anja C Roden[1] and Jennifer M Boland[1]

N = 40

BRG1 (SMARCA4)

SMARCA4-deficient thoracic sarcoma: a distinctive clinicopathological entity with undifferentiated rhabdoid morphology and aggressive behavior

Jennifer L Sauter[1,4], Rondell P Graham[1], Brandon T Larsen[2], Sarah M Jenkins[3], Anja C Roden[1] and Jennifer M Boland[1]

SMARCA4 inactivation defines a group of undifferentiated thoracic malignancies transcriptionally related to BAF-deficient sarcomas

Francois Le Loarer[1-3], Sarah Watson[4,5], Gaelle Pierron[6], Vincent Thomas de Montpreville[7], Stelly Ballet[6], Nelly Firmin[8], Aurelie Auguste[9], Daniel Pissaloux[2], Sandrine Boyault[10], Sandrine Paindavoine[2], Pierre Joseph Dechelotte[11], Benjamin Besse[12,13], Jean Michel Vignaud[14], Marie Brevet[3,15], Elie Fadel[13,16], Wilfrid Richer[4,17], Isabelle Treilleux[2], Julien Masliah-Planchon[5,6], Mojgan Devouassoux-Shisheboran[18], Gerard Zalcman[19,20], Yves Allory[21-23], Franck Bourdeaut[6,24], Francoise Thivolet-Bejui[3,15], Dominique Ranchere-Vince[2], Nicolas Girard[3,25], Sylvie Lantuejoul[26,27], Francoise Galateau-Sallé[28,29], Jean Michel Coindre[30,31], Alexandra Leary[9,12], Olivier Delattre[4-6], Jean Yves Blay[1,3,32,33] & Franck Tirode[4,5,33]

Clinicopathological and molecular characterization of SMARCA4-deficient thoracic sarcomas with comparison to potentially related entities

Akihiko Yoshida[1,2], Eisuke Kobayashi[2,3], Takashi Kubo[4], Makoto Kodaira[2,5,12], Toru Motoi[6], Noriko Motoi[1], Kan Yonemori[2,5], Yuichiro Ohe[7], Shun-ichi Watanabe[8], Akira Kawai[2,3], Takashi Kohno[9], Hiroshi Kishimoto[10], Hitoshi Ichikawa[4,11] and Nobuyoshi Hiraoka[1]

[1]Department of Pathology and Clinical Laboratories, National Cancer Center Hospital, Tokyo, Japan; [2]Rare Cancer Center, National Cancer Center Hospital, Tokyo, Japan; [3]Department of Musculoskeletal Oncology, National Cancer Center Hospital, Tokyo, Japan; [4]Division of Translational Genomics, Exploratory Oncology Research & Clinical Trial Center, National Cancer Center, Tokyo, Japan; [5]Department of Medical Oncology, National Cancer Center Hospital, Tokyo, Japan; [6]Department of Pathology, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital, Tokyo, Japan; [7]Department of Thoracic Oncology, National Cancer Center Hospital, Tokyo, japan; [8]Department of Thoracic Surgery, National Cancer Center Hospital, Tokyo, Japan; [9]Division of Genome Biology, National Cancer Center Research Institute, Tokyo, Japcn; [10]Department of Pathology, Saitama Children's Medical Center, Saitama, Japan and [11]Department oj Clinical Genomics, National Cancer Center Research Institute, Tokyo, Japan
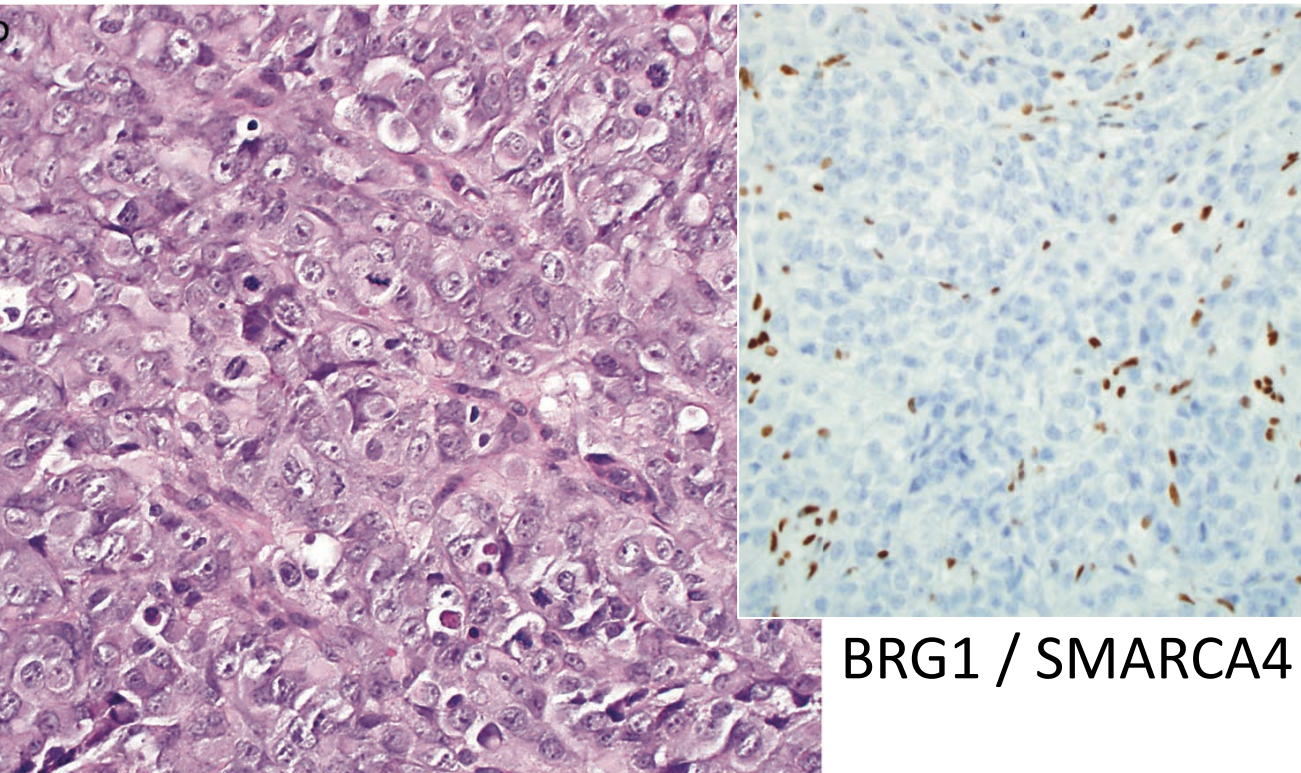
PubMed 28643792

BRG1 (SMARCA4)

SMARCA4-deficient undifferentiated uterine sarcoma (malignant rhabdoid tumor of the uterus): a clinicopathologic entity distinct from undifferentiated carcinoma

David L. Kolin (iD)[1] · Fei Dong[2] · Michele Baltay[2] · Neal Lindeman[2] · Laura MacConaill[2] · Marisa R. Nucci[1] · Christopher P. Crum[1] · Brooke E. Howitt[1,3]

BRG1 / SMARCA4

PubMed
29700418

GLI1

GLI1

A Distinct Malignant Epithelioid Neoplasm With *GLI1* Gene Rearrangements, Frequent S100 Protein Expression, and Metastatic Potential

Expanding the Spectrum of Pathologic Entities With *ACTB/MALAT1/PTCH1-GLI1* Fusions

Cristina R. Antonescu, MD,* Narasimhan P. Agaram, MD,* Yun-Shao Sung, MSc,*
Lei Zhang, MD,* David Swanson, BSc,† and Brendan C. Dickson, MD†

Age (y)/Sex	Site	IHC	Fusion
20/M	Thigh	S100 (+)	*ACTB-GLI1**
16/M	C2 spine with spinal canal extension	S100 (+)	*MALAT1-GLI†*
30/F	Foot (1.5 cm)	S100 (+) CD56 (+)	*ACTB-GLI1**
34/F	Submandibular ST/neck	S100 (+)	*PTCH1-GLI1**
79/F	RP	All IHC tested neg	*ACTB-GLI1**
38/F	Chest wall (skeletal muscle)	CK (F+)	*ACTB-GLI1†*

GLI1

A Distinct Malignant Epithelioid Neoplasm With *GLI1* Gene Rearrangements, Frequent S100 Protein Expression, and Metastatic Potential

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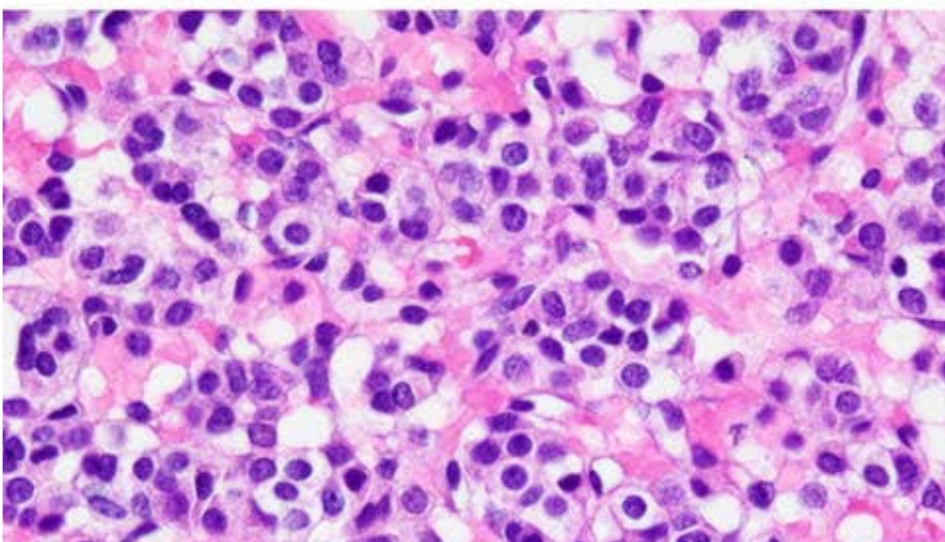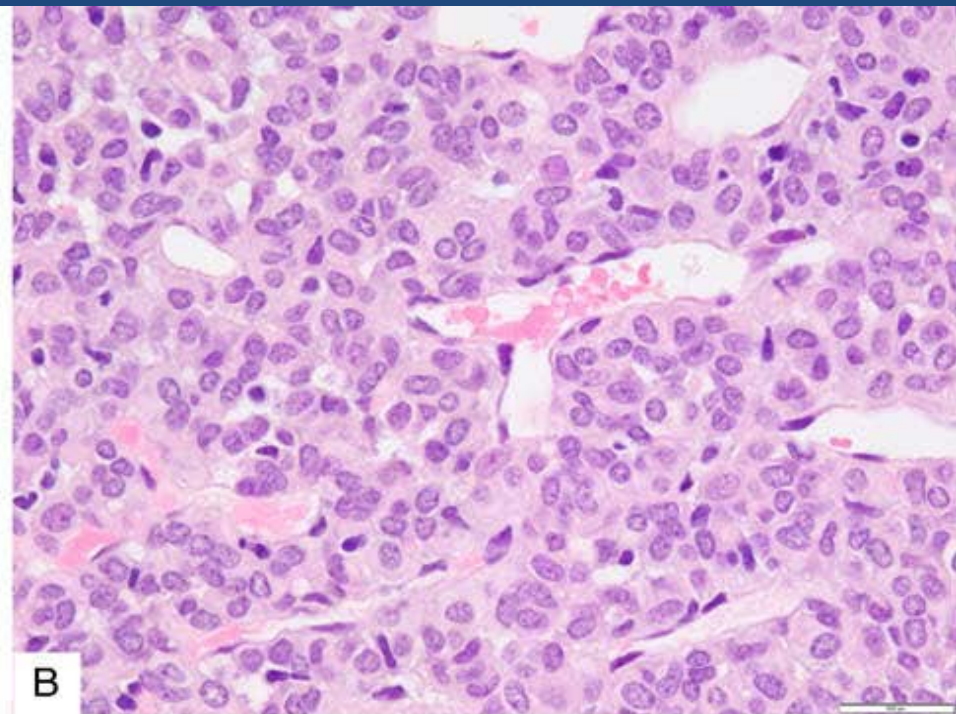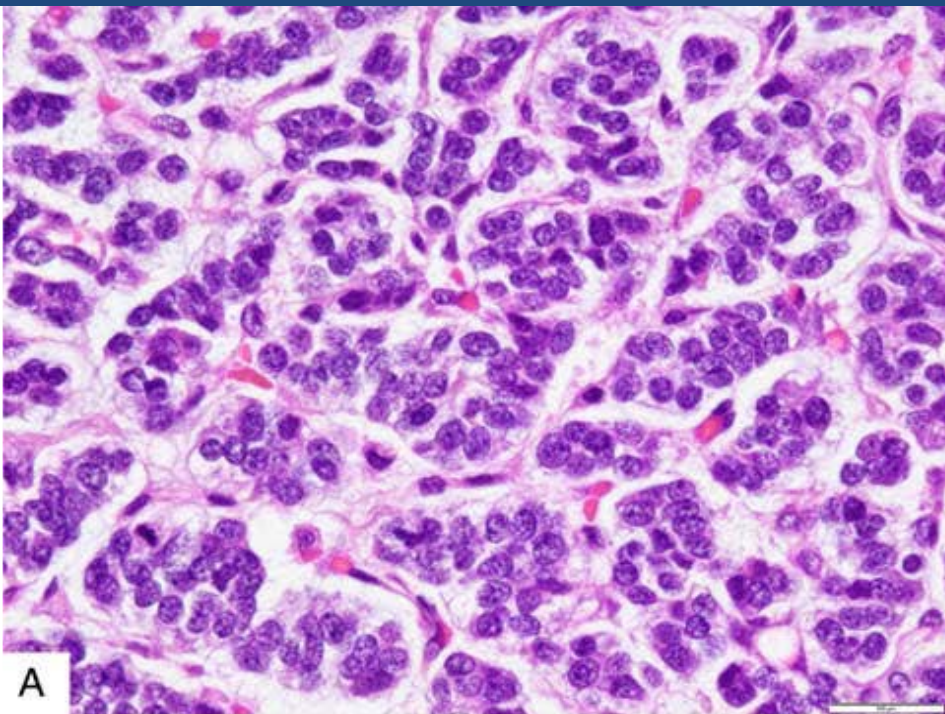
Cristina R. Antonescu, MD,* Narasimhan P. Agaram, MD,* Yun-Shao Sung, MSc,* Lei Zhang, MD,* David Swanson, BSc,† and Brendan C. Dickson, MD†

Age (y)/Sex	Site	FU
20/M	Thigh	Lost FU
16/M	C2 spine with spinal canal extension	Recent case
30/F	Foot (1.5 cm)	LR* Inguinal LN met 21 mo AWD
34/F	Submandibular ST/neck	LR, mets to LN and lung AWD 80 mo
79/F	RP	Inguinal LN mets
38/F	Chest wall (skeletal muscle)	Recent case

GLI1

Gastroblastoma harbors a recurrent somatic *MALAT1–GLI1* fusion gene

Rondell P Graham[1,2], Asha A Nair[3], Jaime I Davila[3], Long Jin[2], Jin Jen[4], William R Sukov[2],
Tsung-Teh Wu[1], Henry D Appelman[5], Jorge Torres-Mora[1], Kyle D Perry[1], Lizhi Zhang[1],
Sara M Kloft-Nelson[4], Ryan A Knudson[4], Patricia T Greipp[2] and Andrew L Folpe[1]

Case	Age	Sex	Specimen type	Tumor size (cm)	Metastases	Follow-up (mos)	Status
1	28	M	Resection	3.8	Lymph node, liver, peritoneum	N/A	N/A
2	27	M	Resection		No	12	ANED
3	9	M	Resection	9.0	No	93	ANED
4	56	F	Needle Bx	4.0	Liver	N/A	N/A

Abbreviations: ANED: alive no evidence of disease; N/A: not available.

PubMed
28731043

NUTM1 Gene Fusions Characterize a Subset of Undifferentiated Soft Tissue and Visceral Tumors
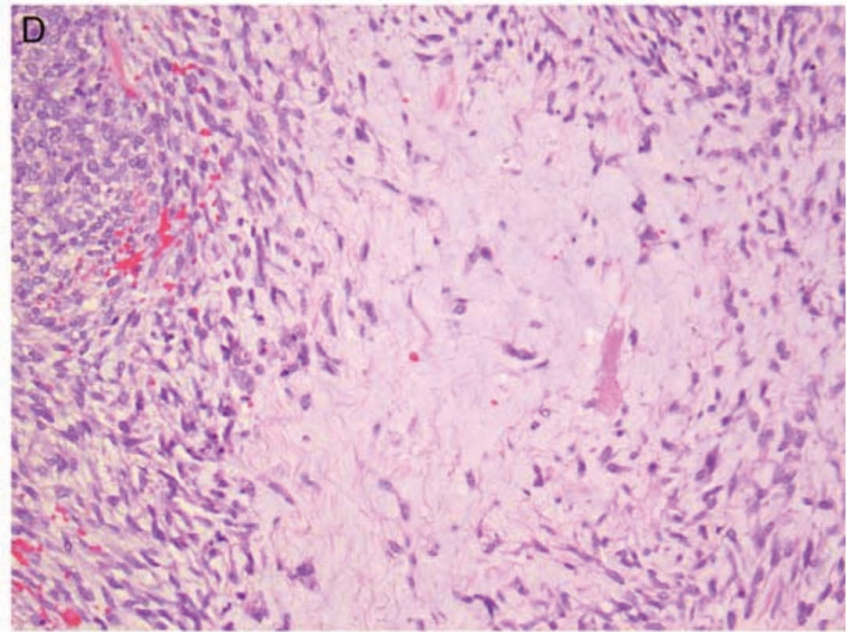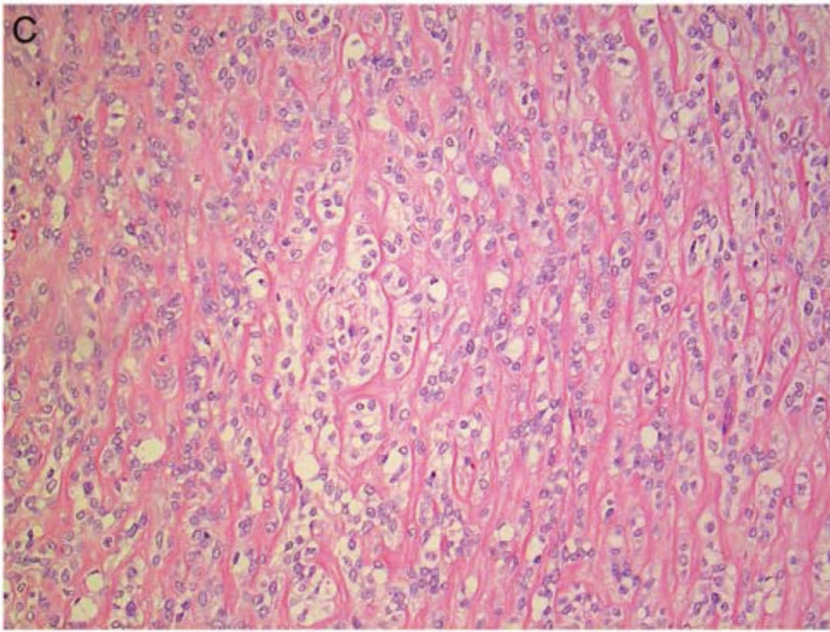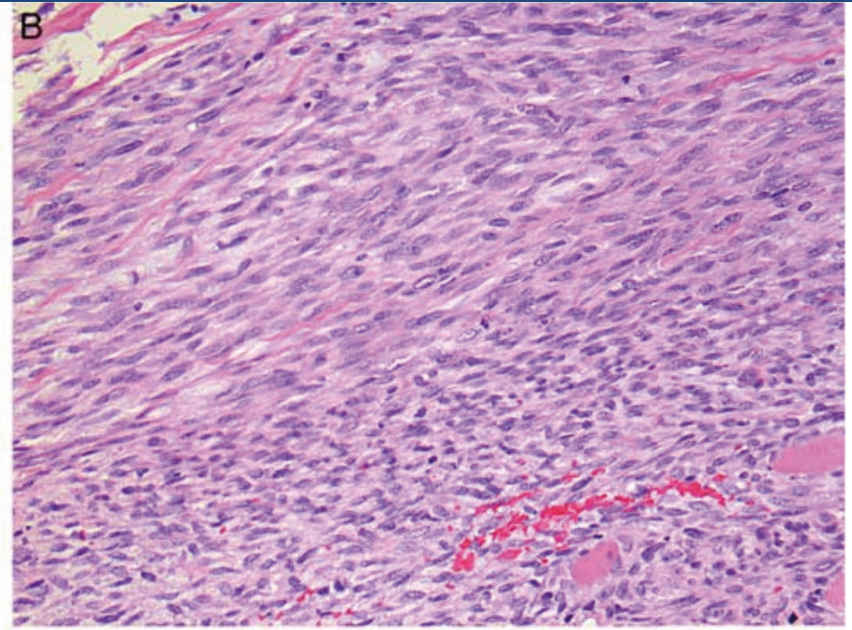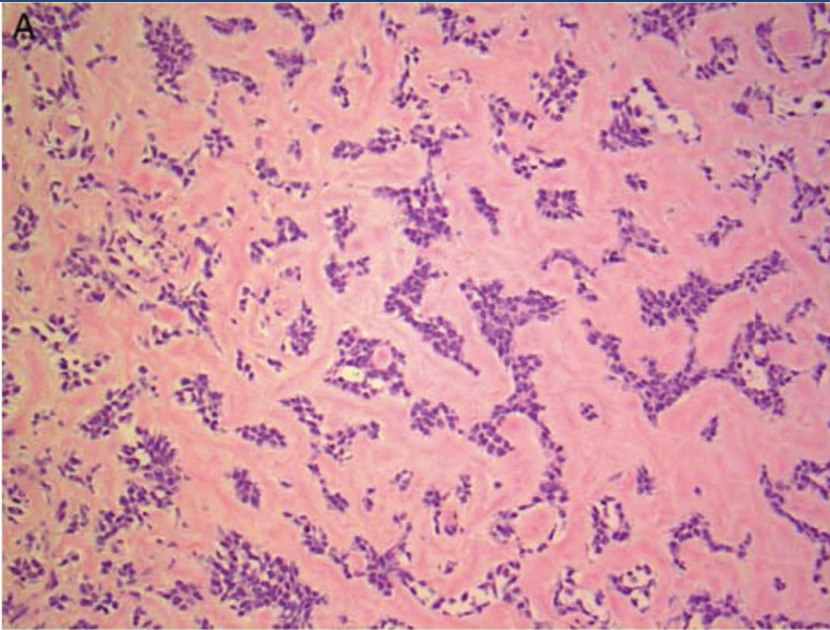
Brendan C. Dickson, MD,*†‡ Yun-Shao Sung, MSc,§ Marc K. Rosenblum, MD,§ Victor E. Reuter, MD,§ Mohammed Harb, MD,‖¶ Jay S. Wunder, MD,‡#** David Swanson, BSc,*† and Cristina R. Antonescu, MD§

Case	Age (y)	Sex	Site	Treatment	Clinical Course	Status (mo)
1*	61	M	Thigh, proximal, L	Biopsy	LN metastases	DOD 3
2	45	M	Upper arm, L	Surgery, chemo, rads	LN, lung, soft tissue metastases	DOD 48
3	39	F	Stomach wall	Surgery, chemo	Peritoneal dissemination, LN, liver, spleen metastases	AWD 108
4	3	M	Brain, parietal, L	Surgery, chemo	NA	DOD 12
5	71	F	Kidney, L	Biopsy	Lung metastases	DOD 2
6	36	F	Kidney, R	Nephrectomy	Lung metastases	DOD 6

NUT

H3K27me3

H3K27me3

Loss of H3K27 trimethylation is not suitable for distinguishing malignant peripheral nerve sheath tumor from melanoma: a study of 387 cases including mimicking lesions

Sophie Le Guellec[1], Nicolas Macagno[2], Valérie Velasco[3], Laurence Lamant[4], Marick Lae[5], Thomas Filleron[6], Nausicaa Malissen[7], Elisabeth Cassagnau[8], Philippe Terrier[9], Christine Chevreau[10], Dominique Ranchere-Vince[11] and Jean-Michel Coindre[3,12,13]

	T Overall population, N (%)	H3K27me3 IHC Complete loss, N (%)	Partial loss, N (%)
MPNST (Total)	122	88 (72)	23 (19)
NF1 associated	65 (53)	46 (71)	12 (18)
Radiation exposure	4 (3)	4 (100)	0
Sporadic	53 (44)	38 (72)	11 (20)
'Certain'	15	10 (67)	5 (33)
'Probable'	38	28 (74)	6 (16)
Melanoma (Total)	265	98 (37)	136 (51)
Primary	36 (14)	9 (25)	19 (53)
Desmoplastic/fusiform cells	28	7 (25)	17 (61)
Other	8	2 (25)	2 (25)
Metastasis	229 (86)	89 (39)	117 (51)

H3K27me3

Significance of H3K27me3 loss in the diagnosis of malignant peripheral nerve sheath tumors

Melike Pekmezci[1], Areli K Cuevas-Ocampo[1], Arie Perry[1,2] and Andrew E Horvai[1]

	0 (< 5%)	1+ (5–50%)	2+ (50–95%)	3+ (> 95%)
SS (n = 82)	7 (9%)	14 (17%)	37 (45%)	24 (29%)
Monophasic (n = 62)	7 (11%)	9 (15%)	28 (45%)	18 (29%)
Biphasic (n = 18)	—	4 (22%)	9 (50%)	5 (28%)
Poorly differentiated (n = 2)	—	1 (50%)	—	1 (50%)
MPNST (n = 39)	17 (44%)	6 (15%)	4 (10%)	12 (31%)
NF1 associated (n = 26)	13 (50%)	6 (23%)	—	7 (27%)
Sporadic (n = 13)	4 (31%)	—	4 (31%)	5 (38%)
FS-DFSP (n = 10)	1 (10%)	3 (30%)	3 (30%)	3 (30%)

NTRK

Recurrent *NTRK1* Gene Fusions Define a Novel Subset of Locally Aggressive Lipofibromatosis-like Neural Tumors

Narasimhan P. Agaram, MBBS,* Lei Zhang, MD,* Yun-Shao Sung, MS,* Chun-Liang Chen, MS,*
Catherine T. Chung, MD,† Cristina R. Antonescu, MD,* and Christopher DM Fletcher, MD, FRCPath‡
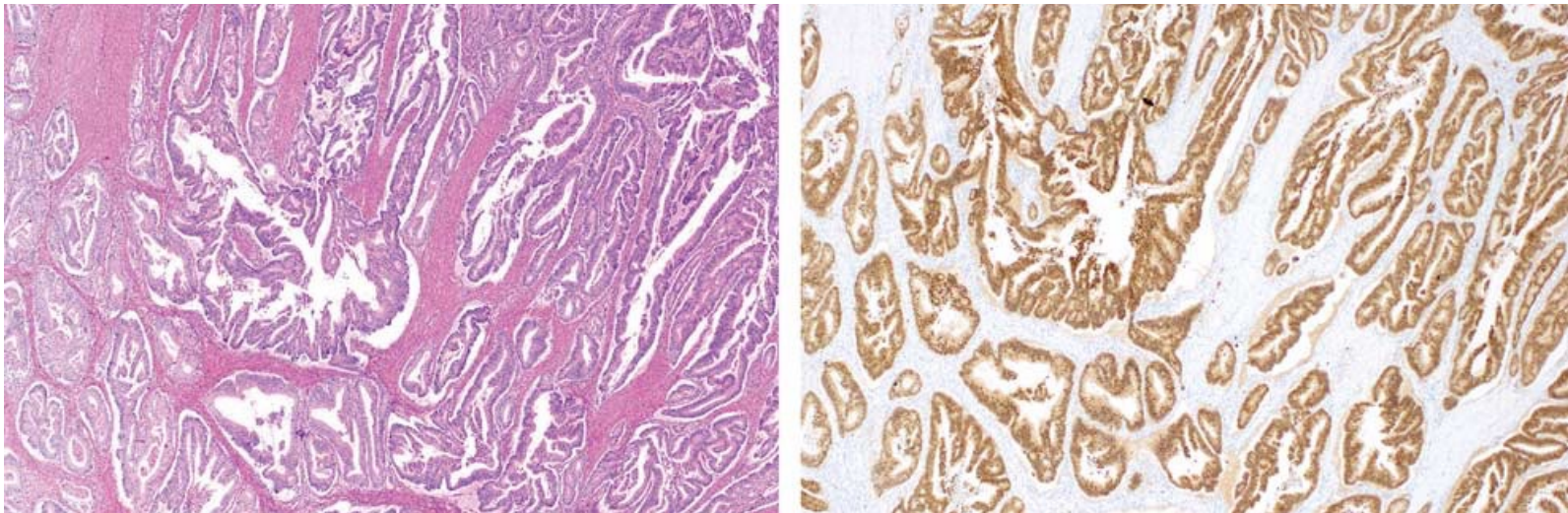
Paediatric and adult soft tissue sarcomas with *NTRK1* gene fusions: a subset of spindle cell sarcomas unified by a prominent myopericytic/haemangiopericytic pattern

Florian Haller,[1]* Jasmin Knopf,[1] Anne Ackermann,[1] Matthias Bieg,[2] Kortine Kleinheinz,[2] Matthias Schlesner,[2] Evgeny A Moskalev,[1] Rainer Will,[3] Ali Abdel Satir,[4] Ibtihalat E Abdelmagid,[5] Johannes Giedl,[1] Roman Carbon,[6] Oliver Rompel,[7] Arndt Hartmann,[1] Stefan Wiemann,[3,8] Markus Metzler[9] and Abbas Agaimy[1]

NTRK

Pan-Trk Immunohistochemistry is an Efficient and Reliable Screen for the Detection of *NTRK* Fusions

Jaclyn F. Hechtman, MD,* Ryma Benayed, PhD,* David M. Hyman, MD,† Alexander Drilon, MD,†
Ahmet Zehir, PhD,* Denise Frosina, BS,* Maria E. Arcila, MD,* Snjezana Dogan, MD,*
David S. Klimstra, MD,* Marc Ladanyi, MD,* and Achim A. Jungbluth, MD*

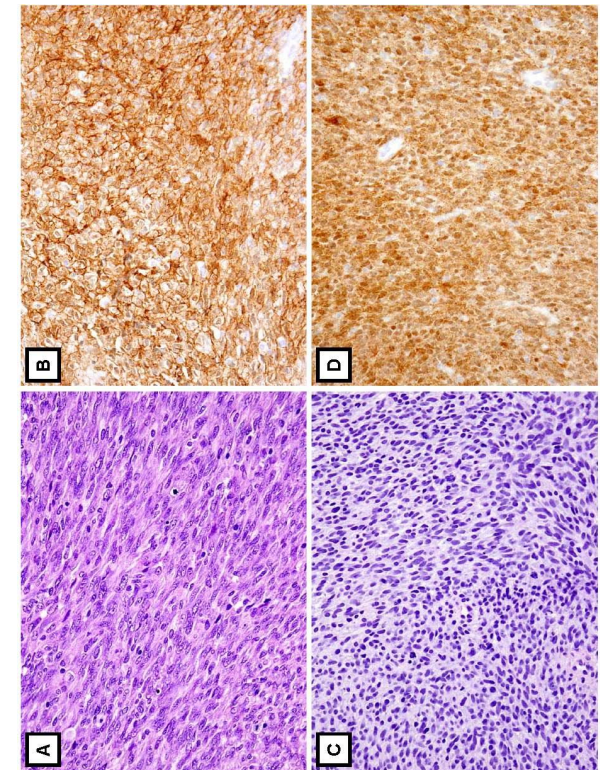Abcam **anti-panTRK**
Clone EPR17341
Sen 95% Spe 100%

PubMed 28719467

Evaluation of Pan-TRK Immunohistochemistry in Infantile Fibrosarcoma, Lipofibromatosis-like Neural Tumor, and Histologic Mimics

Yin P. Hung, Christopher D. M. Fletcher, and Jason L. Hornick.

Tumor Type	Total Cases	Diffuse Pan-TRK Positive (%)
Infantile fibrosarcoma	15	14 (93)
Lipofibromatosis-like neural tumor	5	5 (100)
Other pediatric spindle cell tumors and mimics	190	16 (8)
Lipofibromatosis	5	0 (0)
Primitive myxoid mesenchymal tumor of infancy	10	5 (50)
Fibrous hamartoma of infancy	15	5 (33)
Fibrosarcomatous dermatofibrosarcoma protuberans	20	3 (15)
Low-grade myofibroblastic sarcoma	10	1 (10)
Spindle-cell rhabdomyosarcoma	20	1 (5)
Synovial sarcoma	20	0 (0)
Malignant peripheral nerve sheath tumor	20	0 (0)
Low-grade fibromyxoid sarcoma	20	0 (0)
Nodular fasciitis	20	0 (0)
Desmoid fibromatosis, extra-abdominal	15	0 (0)
Myofibroma	15	1 (7)

Recurrent *EML4–NTRK3* fusions in infantile fibrosarcoma and congenital mesoblastic nephroma suggest a revised testing strategy

Alanna J Church[1], Monica L Calicchio[2], Valentina Nardi[3], Alena Skalova[4], Andre Pinto[5], Deborah A Dillon[6], Carmen R Gomez-Fernandez[5], Namitha Manoj[7], Josh D Haimes[7], Joshua A Stahl[7], Filemon S Dela Cruz[8], Sarah Tannenbaum-Dvir[9], Julia L Glade-Bender[9], Andrew L Kung[7], Steven G DuBois[10], Harry P Kozakewich[1], Katherine A Janeway[10], Antonio R Perez-Atayde[1] and Marian H Harris[1]
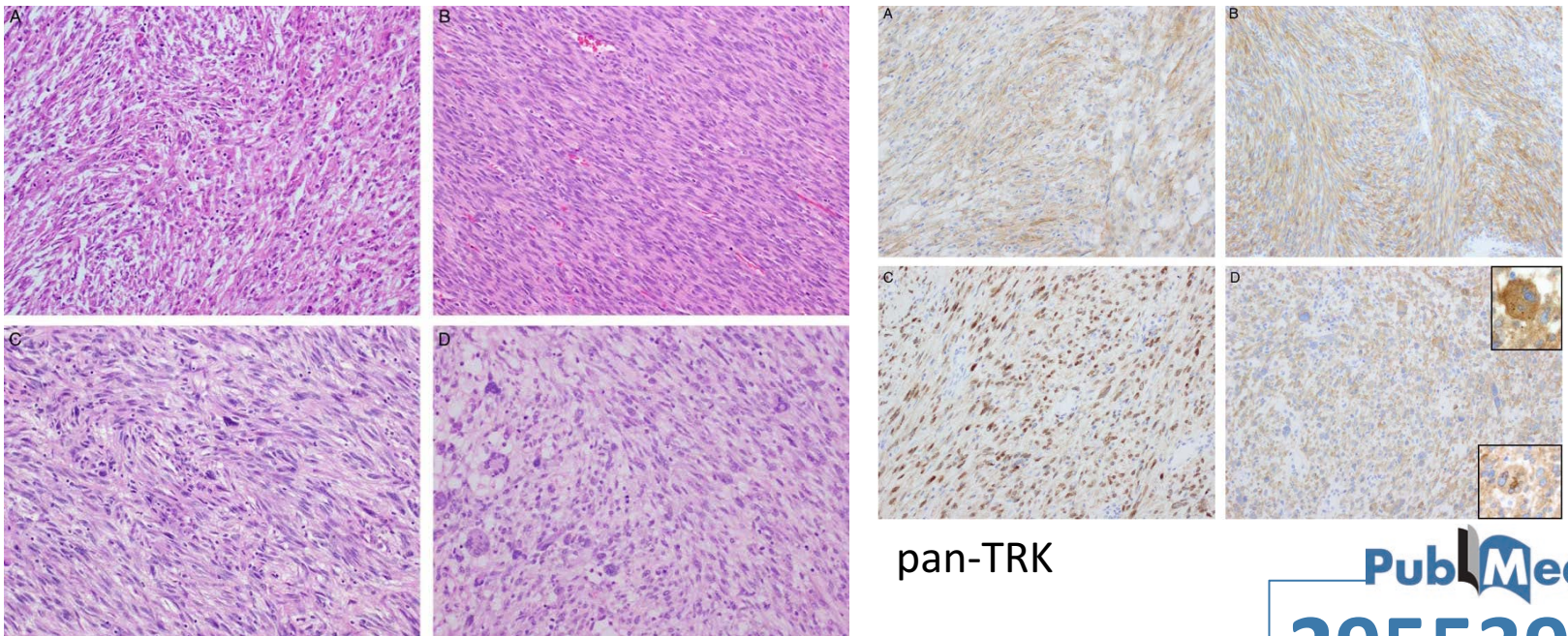
PubMed
29099503

NTRK

NTRK Fusions Define a Novel Uterine Sarcoma Subtype With Features of Fibrosarcoma

Sarah Chiang, MD,* Paolo Cotzia, MD,* David M. Hyman, MD,† Alexander Drilon, MD,‡ William D. Tap, MD,§ Lei Zhang, MD,* Jaclyn F. Hechtman, MD,* Denise Frosina, BS,* Achim A. Jungbluth, MD, PhD,* Rajmohan Murali, MBBS, MD, FRCPA,* Kay J. Park, MD,* Robert A. Soslow, MD,* Esther Oliva, MD,‖¶ A. John Iafrate, MD, PhD,‖¶ Ryma Benayed, PhD,* Marc Ladanyi, MD,* and Cristina R. Antonescu, MD*

pan-TRK

29553955

Merci de votre attention….
quoi de neuf en pathologie osseuse ?