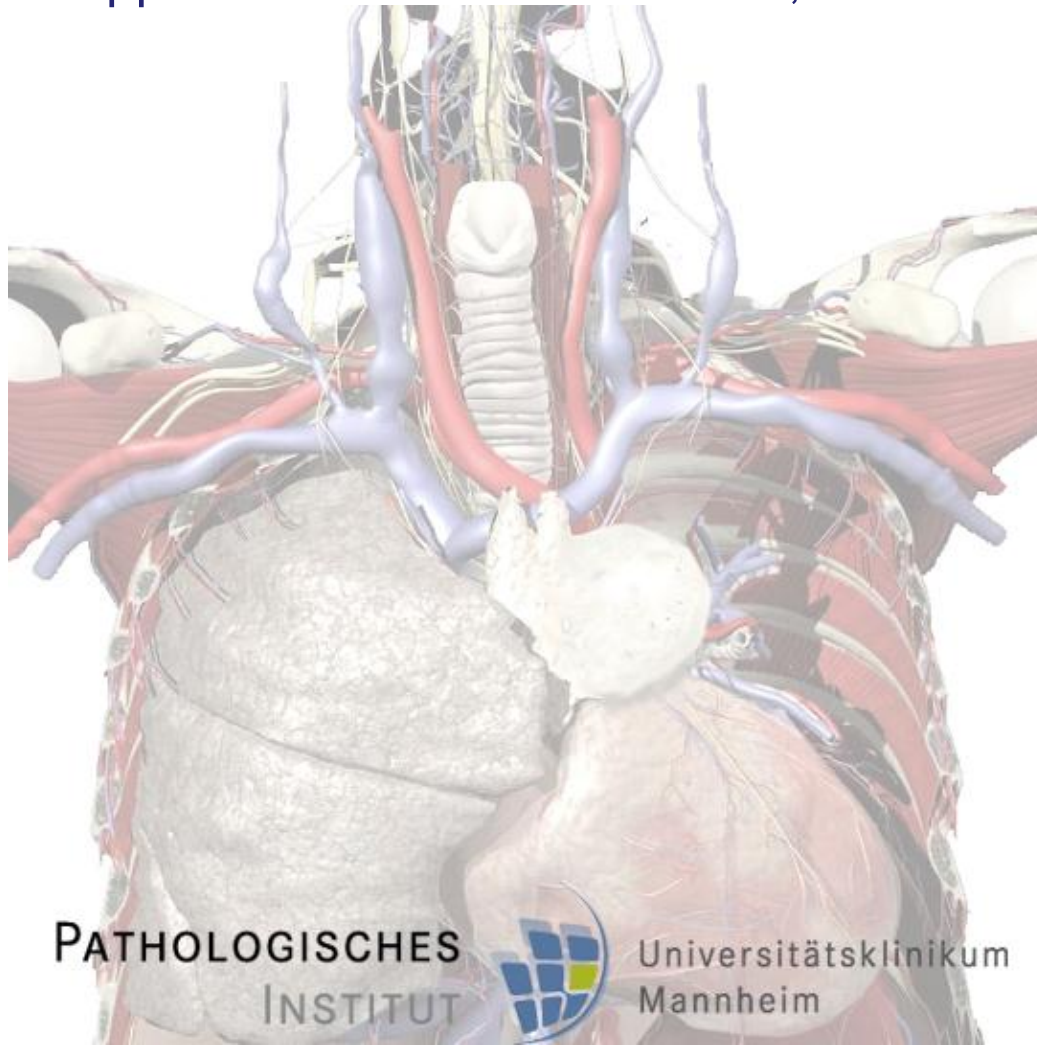


Is thymic carcinoma a specific entity?

Philipp Ströbel & Alexander Marx, Mannheim



IT OCD 2010


PATHOLOGISCHES
INSTITUT



Universitätsklinikum
Mannheim

The WHO classification separates thymic carcinomas from thymomas


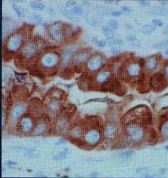

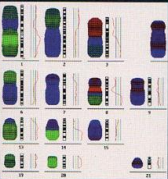
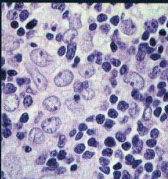
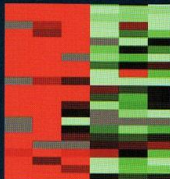
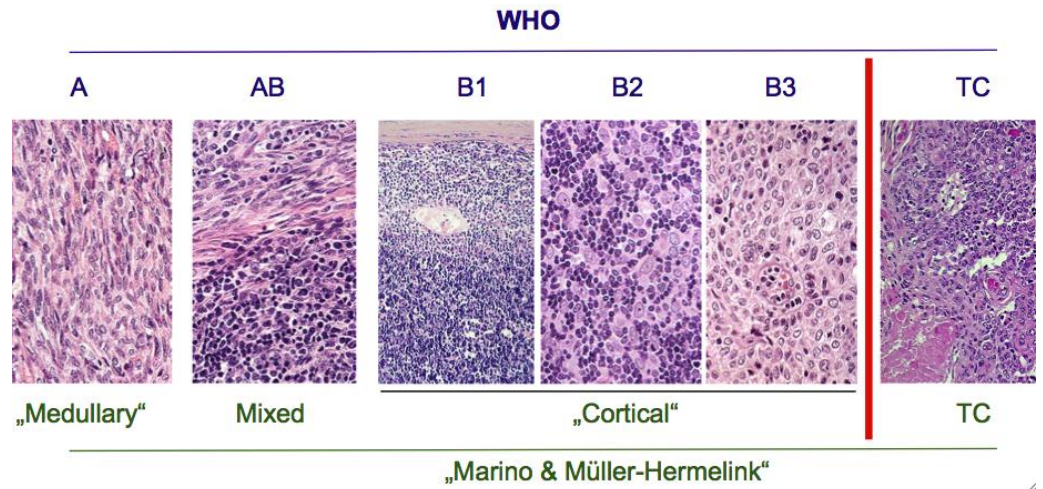
World Health Organization Classification of Tumours



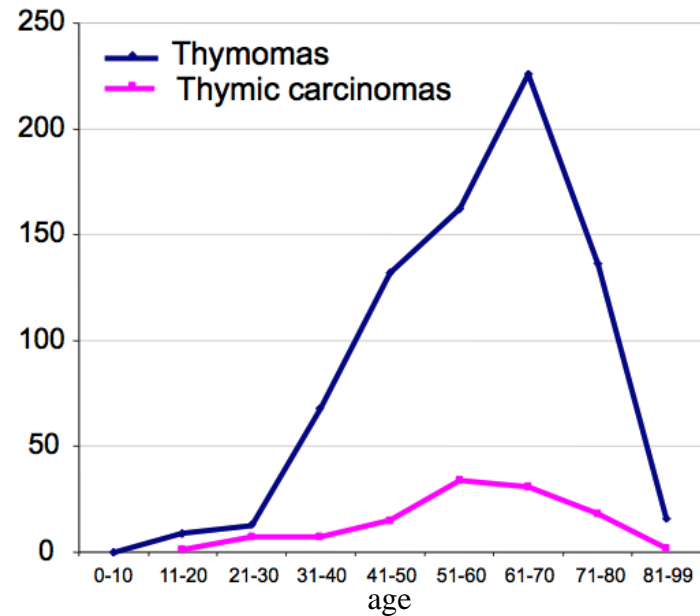
Pathology & Genetics

Tumours of the Lung, Pleura, Thymus and Heart

Edited by William D. Travis, Elizabeth Brambilla, H. Konrad Müller-Hermelink and Curtis C. Harris

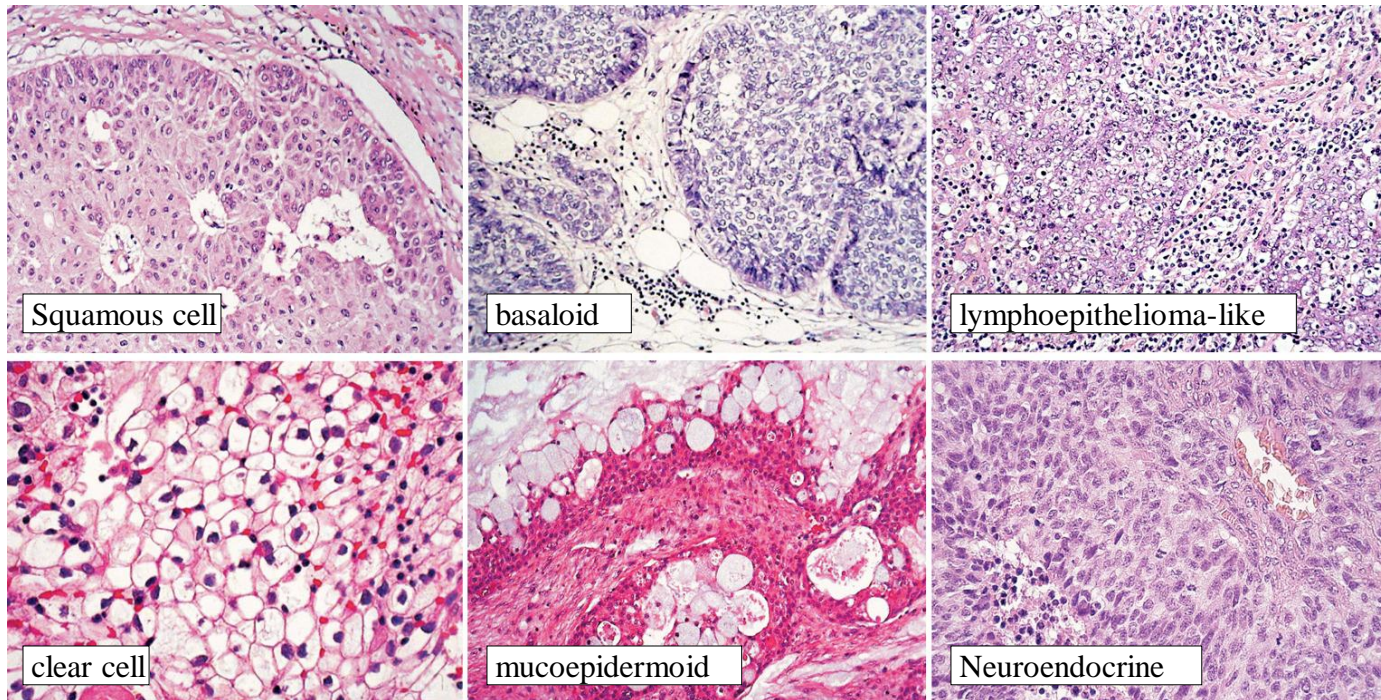








Clinical differences between thymoma and thymic carcinoma



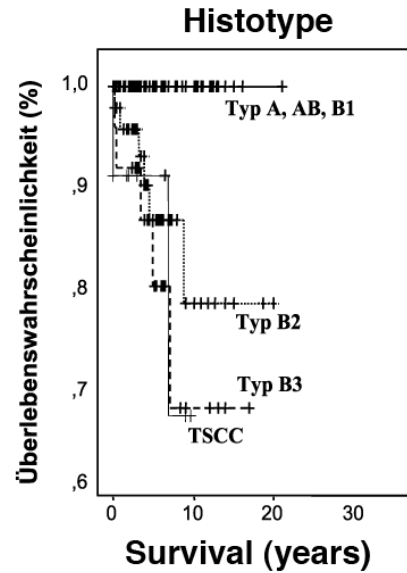
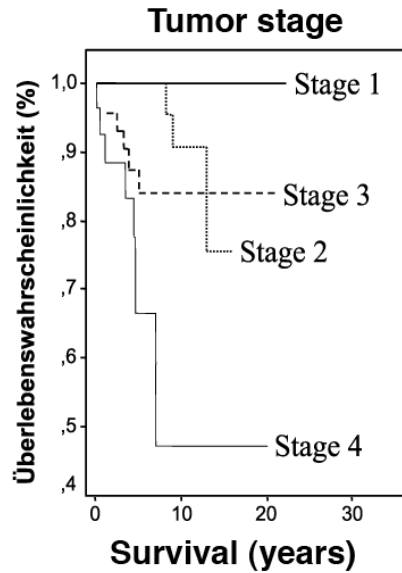
	Thymoma	Thymic carcinoma
Incidence	1 per Million	10 per Million
Myasthenia gravis	frequent	absent
Lymph node mets	absent	frequent
Staging system	Masaoka	TNM (tentative)

Major subtypes of thymic carcinoma



	TSCC (%)	LELC (%)	NEC (%)	UTC (%)	Other (%)
<i>Chalabreysse et al.</i>	29	12	23	6	30
<i>Chen et al.</i>	60	10	16	12	2
<i>Dorfman et al.</i>	38	17	30	8	7
<i>Hsu et al.</i>	40	5	10	35	10
<i>Kuo et al.</i>	46	15	15	n.a.	24
<i>Suster&Rosai</i>	27	32	13	12	16

Prognostic relevance of thymic carcinoma subclassification

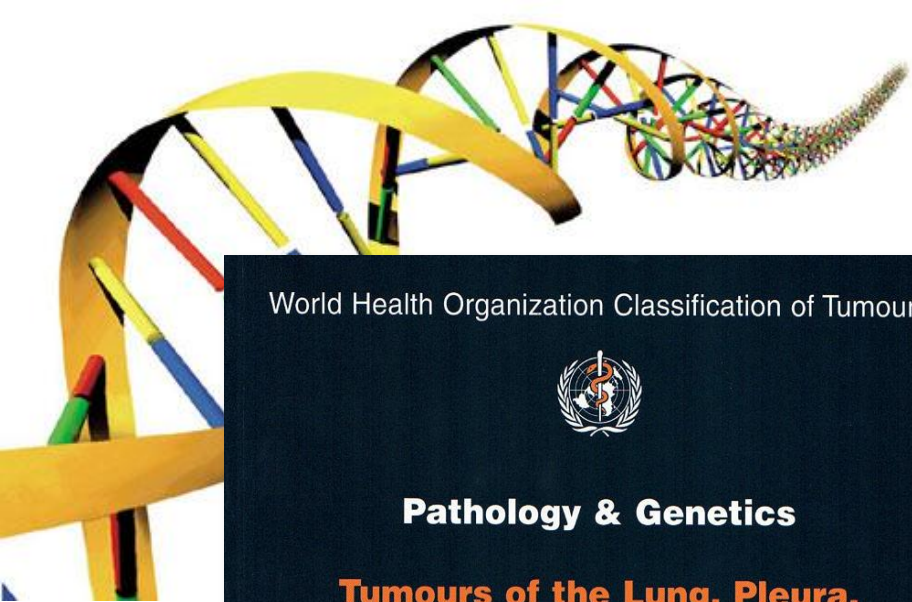


Favourable

Squamous cell (10 y OS 45-65 %)
WD NEC (5 y OS 50 -75 %)

Dismal

basaloid (median surv 20-34 mths)
Lymphoepithelioma-like
PD NEC



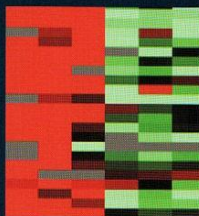
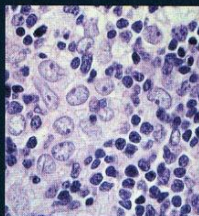
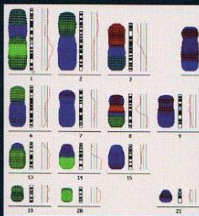
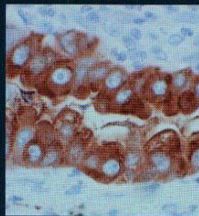
World Health Organization Classification of Tumours



Pathology & Genetics

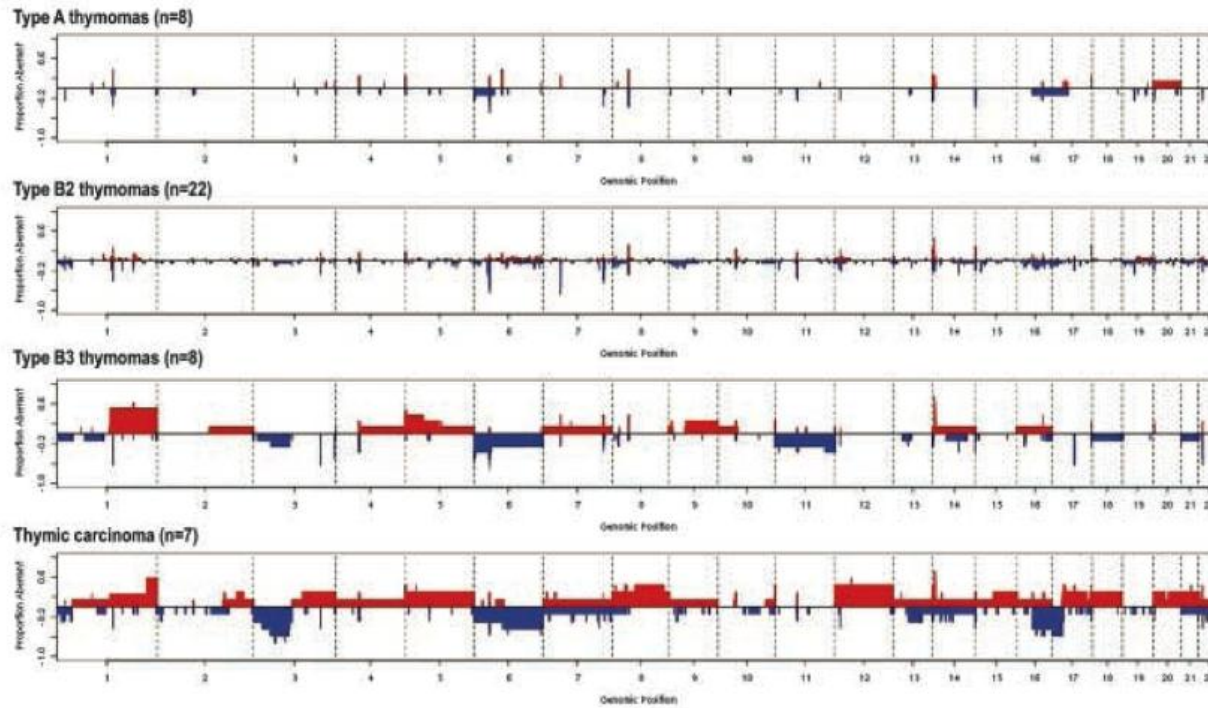
Tumours of the Lung, Pleura, Thymus and Heart

Edited by William D. Travis, Elizabeth Brambilla,
H. Konrad Müller-Hermelink and Curtis C. Harris



Is the distinction between thymomas and thymic carcinomas supported by genetic data?

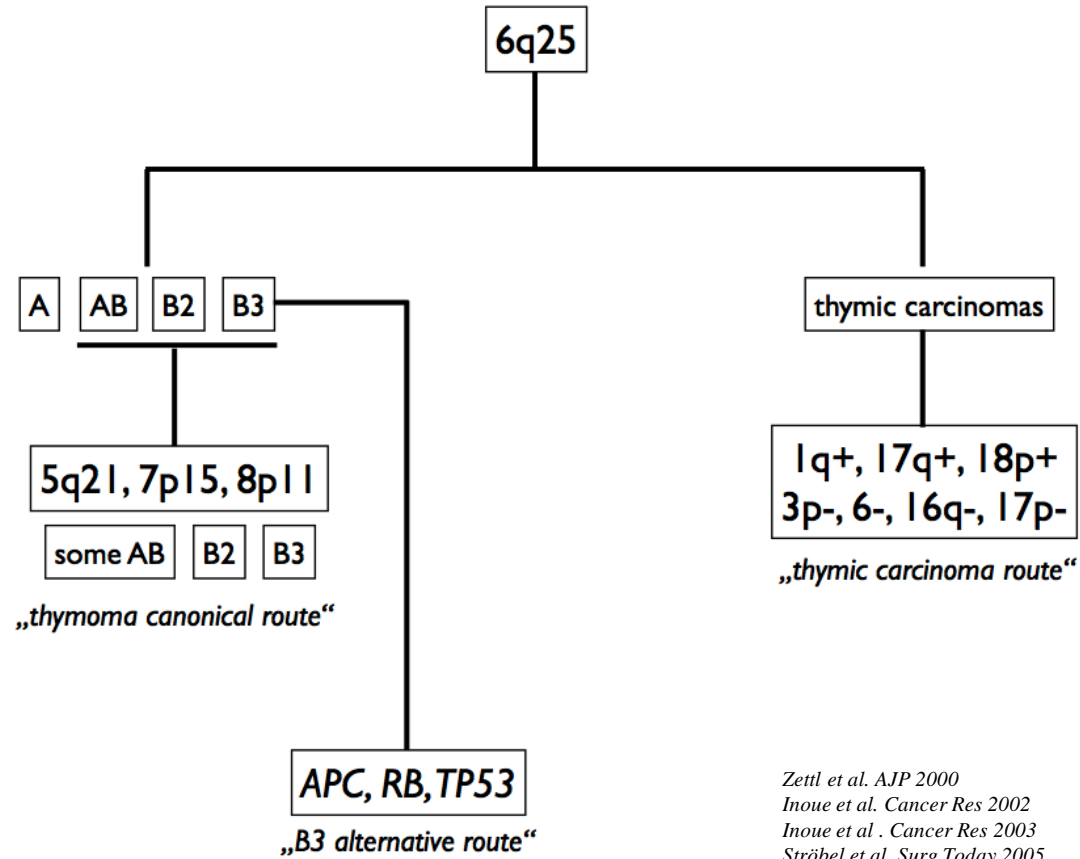
Array CGH from thymomas and thymic carcinomas



Girard et al. Clin Cancer Res 2009



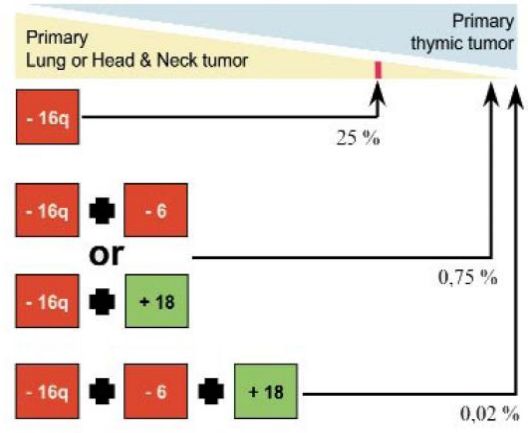
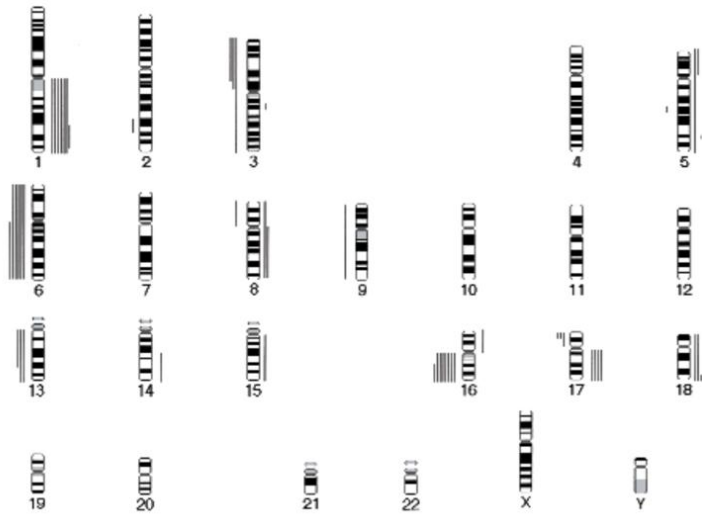
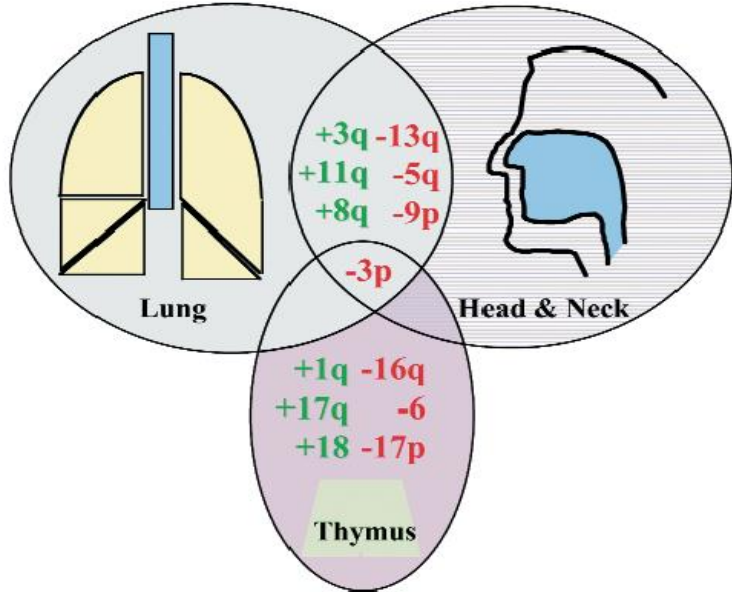
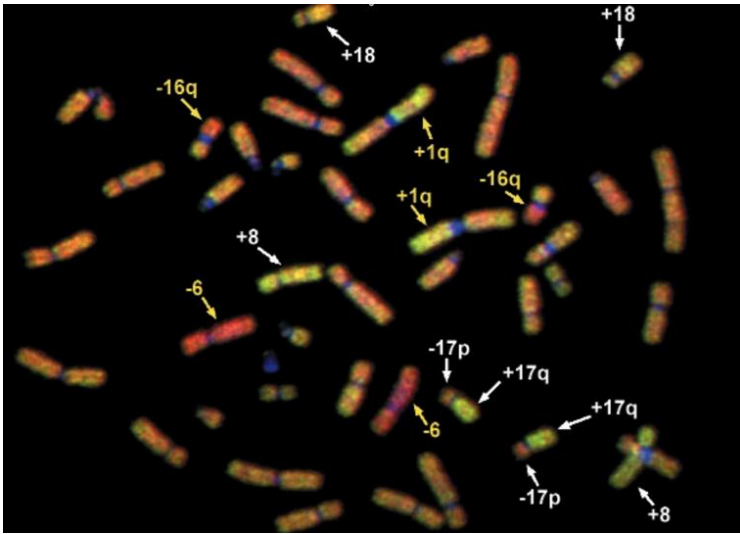
Major oncogenic routes in thymomas and thymic carcinomas



Zettl et al. AJP 2000
Inoue et al. Cancer Res 2002
Inoue et al. Cancer Res 2003
Ströbel et al. Surg Today 2005



Genomic alterations in thymic carcinomas differ from lung tumors (SCC)



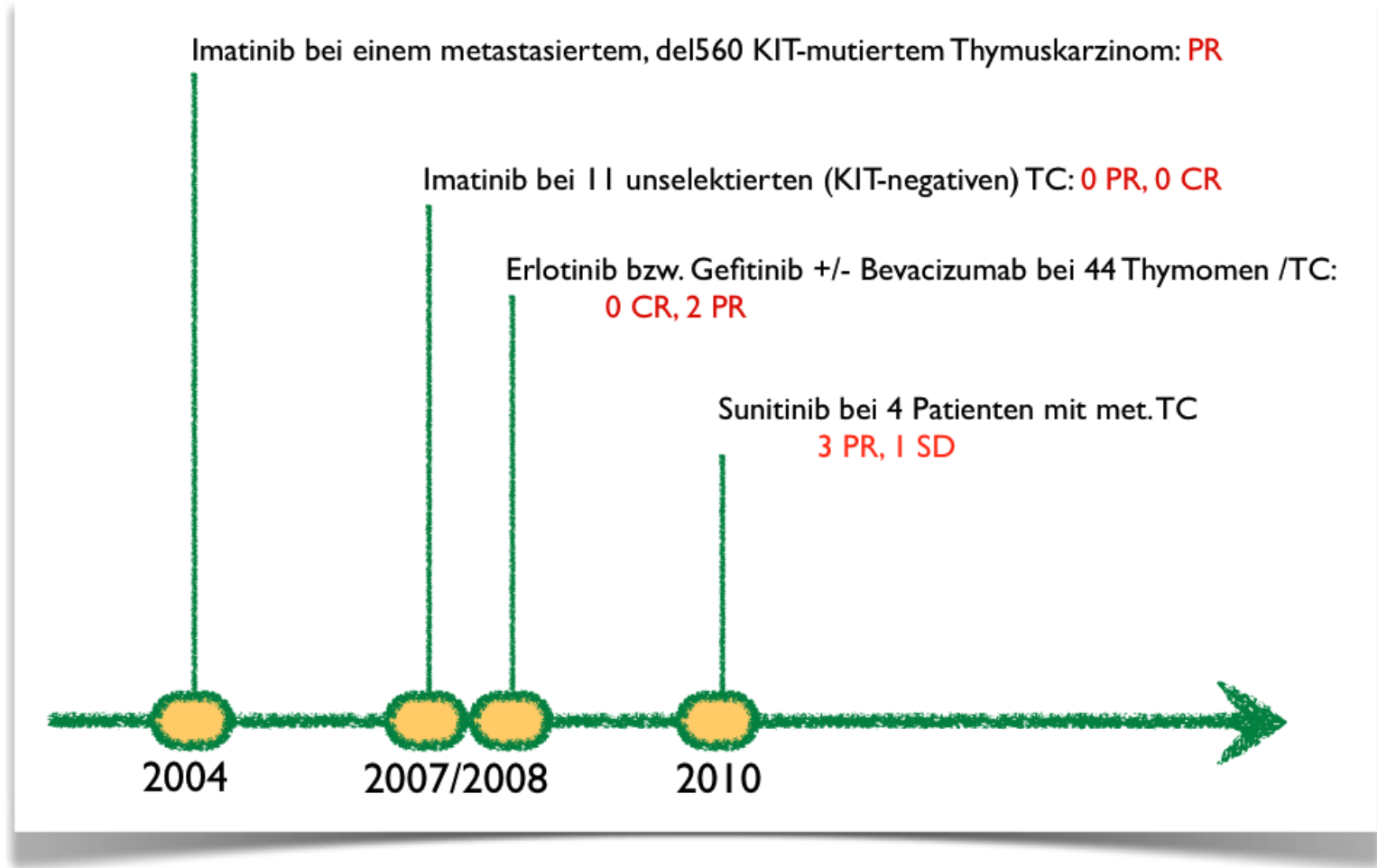
Molecular features with therapeutic relevance in SCC of thymus and lung

	Thymic SCC	Lung SCC
5 ys OS	90 %	52 %
Smoking history	irrelevant	> 90 %
OR to cisplatinum	70 %	60 %
KIT mutations	5 - 10 %	absent
EGFR mutations	absent	5 %
KRAS mutations	absent	absent

Ströbel et al. JCO 2004
Asamura et al. JTO 2008
Scagliotti Oncology 2000
Loehrer et al. JCO 1997
Burger et al. 2005
Brose et al. Cancer Res 2002

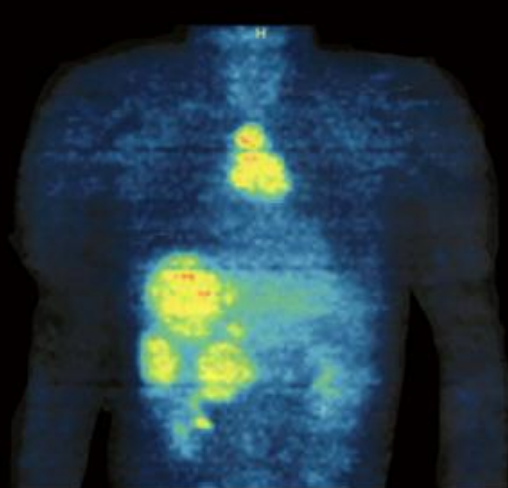


A brief history of „targeted therapies“ in thymic carcinoma

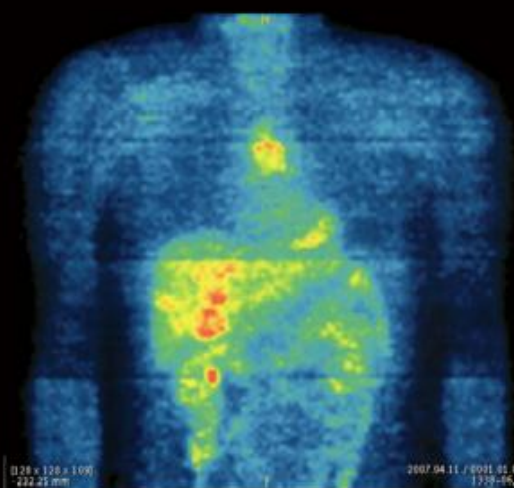


Case I: Response to sunitinib in an advanced thymic carcinoma

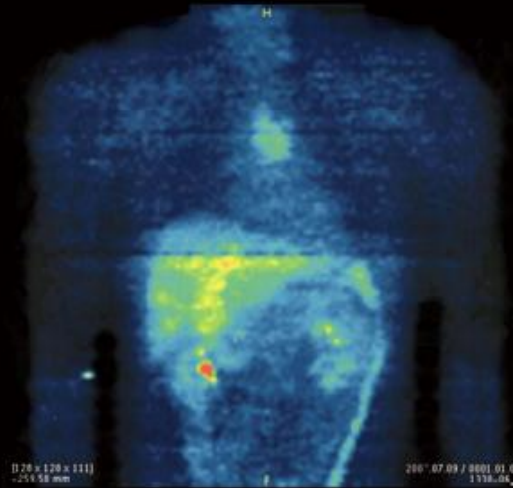
36ys old male, thymic carcinoma (poorly diff SCC) Masaoka stage 4b



October 2006
before Sunitinib



April 2007
7 mths Sunitinib



June 2007
9 mths Sunitinib

Ströbel et al. BJC 2010

- Thymic carcinoma is a distinct group of mediastinal tumors that must be distinguished from thymomas and lung cancers



- Thymic carcinoma is a distinct group of mediastinal tumors that must be distinguished from thymomas and lung cancers
- Subclassification of thymic carcinoma (e.g. squamous cell, basaloid, neuroendocrine etc.) is relevant for both prognosis and therapy



- Thymic carcinoma is a distinct group of mediastinal tumors that must be distinguished from thymomas and lung cancers
- Subclassification of thymic carcinoma (e.g. squamous cell, basaloid, neuroendocrine etc.) is relevant for both prognosis and therapy
- Thymic (squamous cell) carcinomas should be screened for KIT mutations (response to Imatinib) – screening for EGFR or KRAS mutations is irrelevant



- Thymic carcinoma is a distinct group of mediastinal tumors that must be distinguished from thymomas and lung cancers
- Subclassification of thymic carcinoma (e.g. squamous cell, basaloid, neuroendocrine etc.) is relevant for both prognosis and therapy
- Thymic (squamous cell) carcinomas should be screened for KIT mutations (response to Imatinib) – screening for EGFR or KRAS mutations is irrelevant
- Thymic squamous cell carcinomas may be responsive to multikinase inhibitors (e.g. sunitinib)

