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Ikke Småcellet Lungecancer

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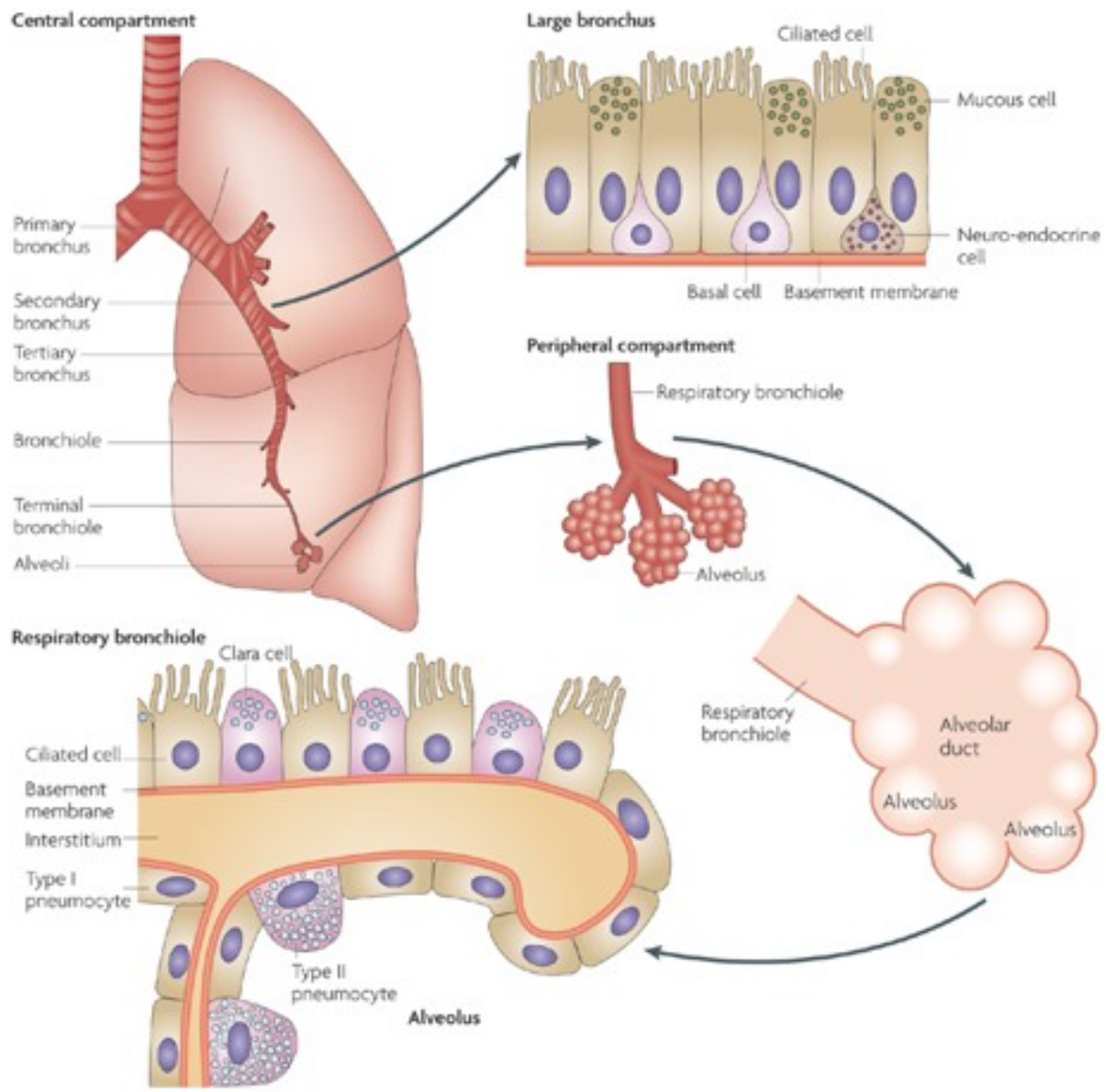
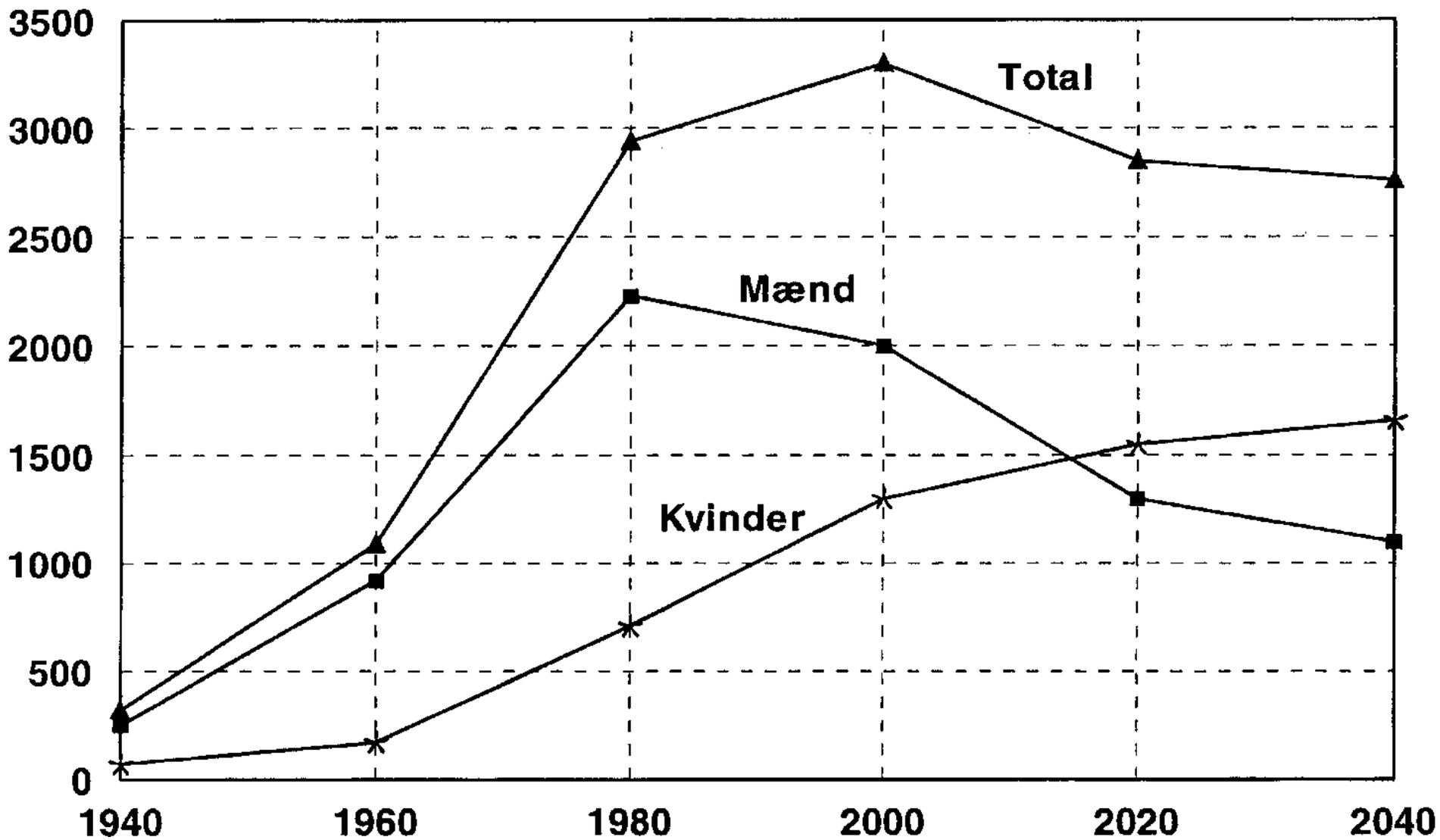
Lunge Carcinom



Lunge carcinomer dannes fra stamceller i lungeepithelet

Lunge Carcinom

Antal primære maligne lungetumorer i DK:



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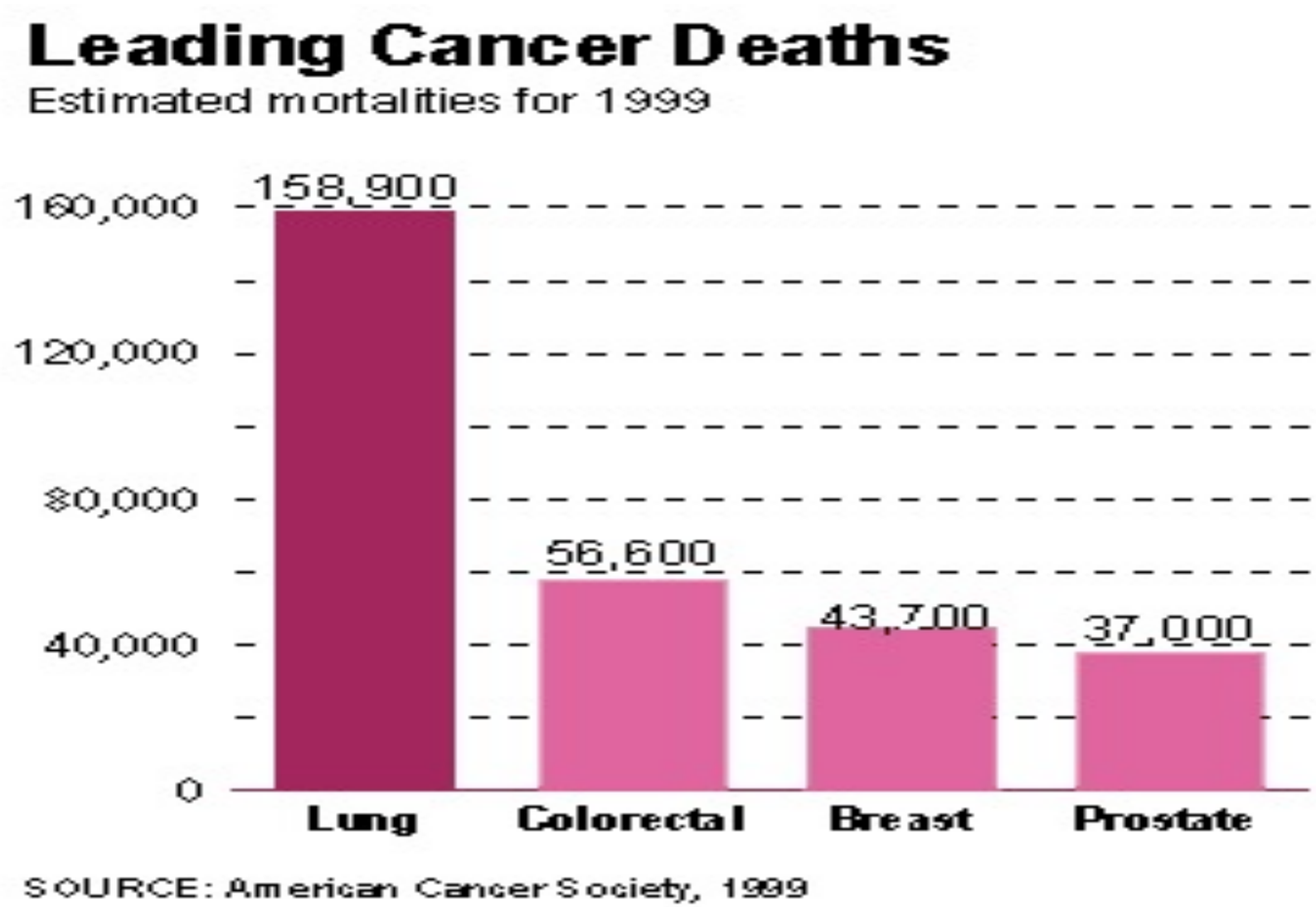
Lunge Carcinom



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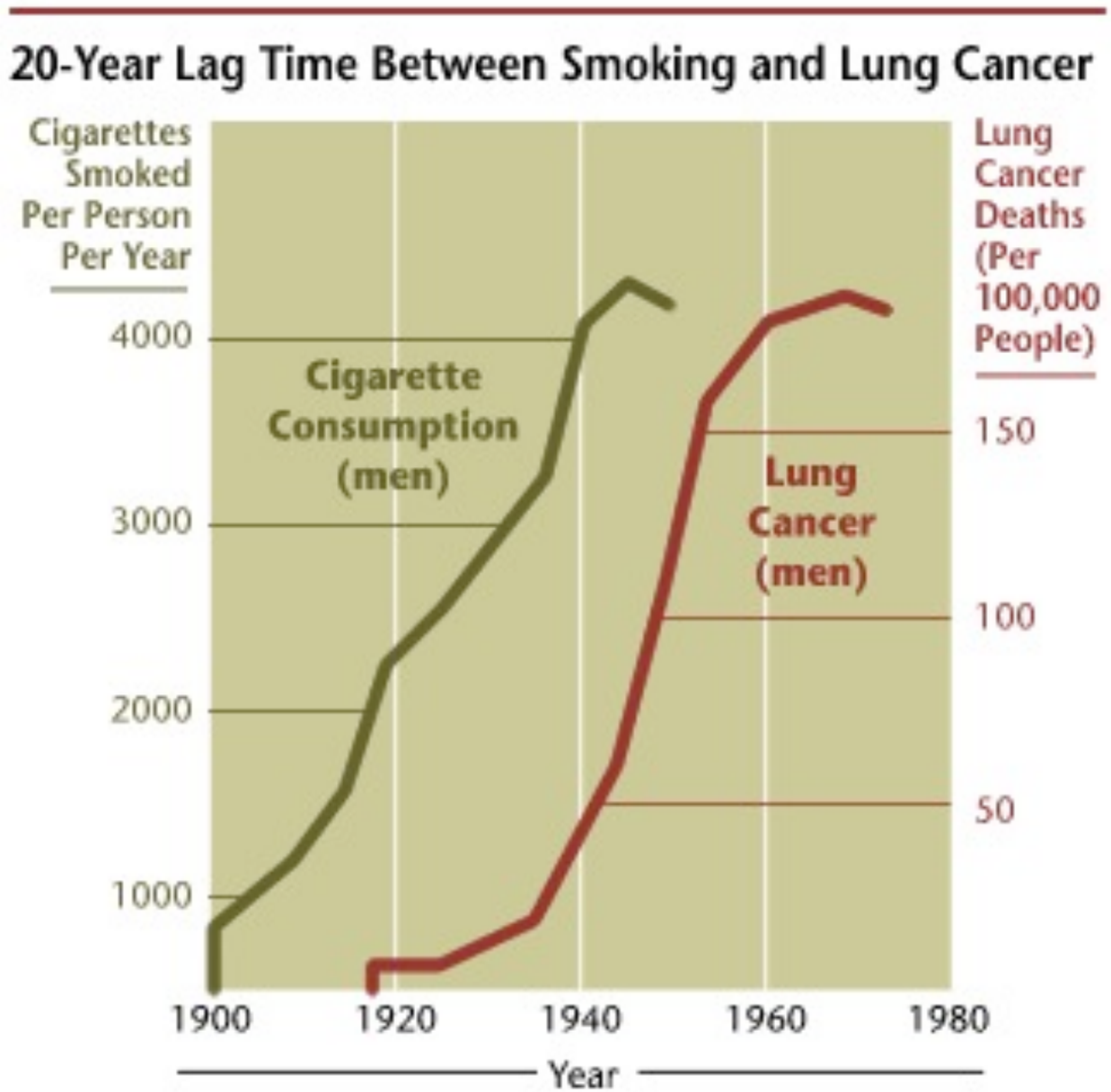
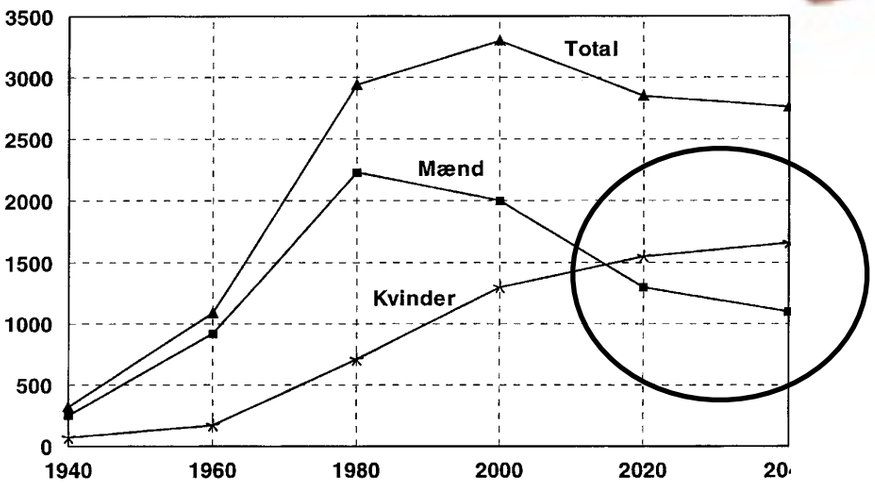
Lunge Carcinom



Lunge Carcinom

Antal primære maligne lungetumorer i DK:



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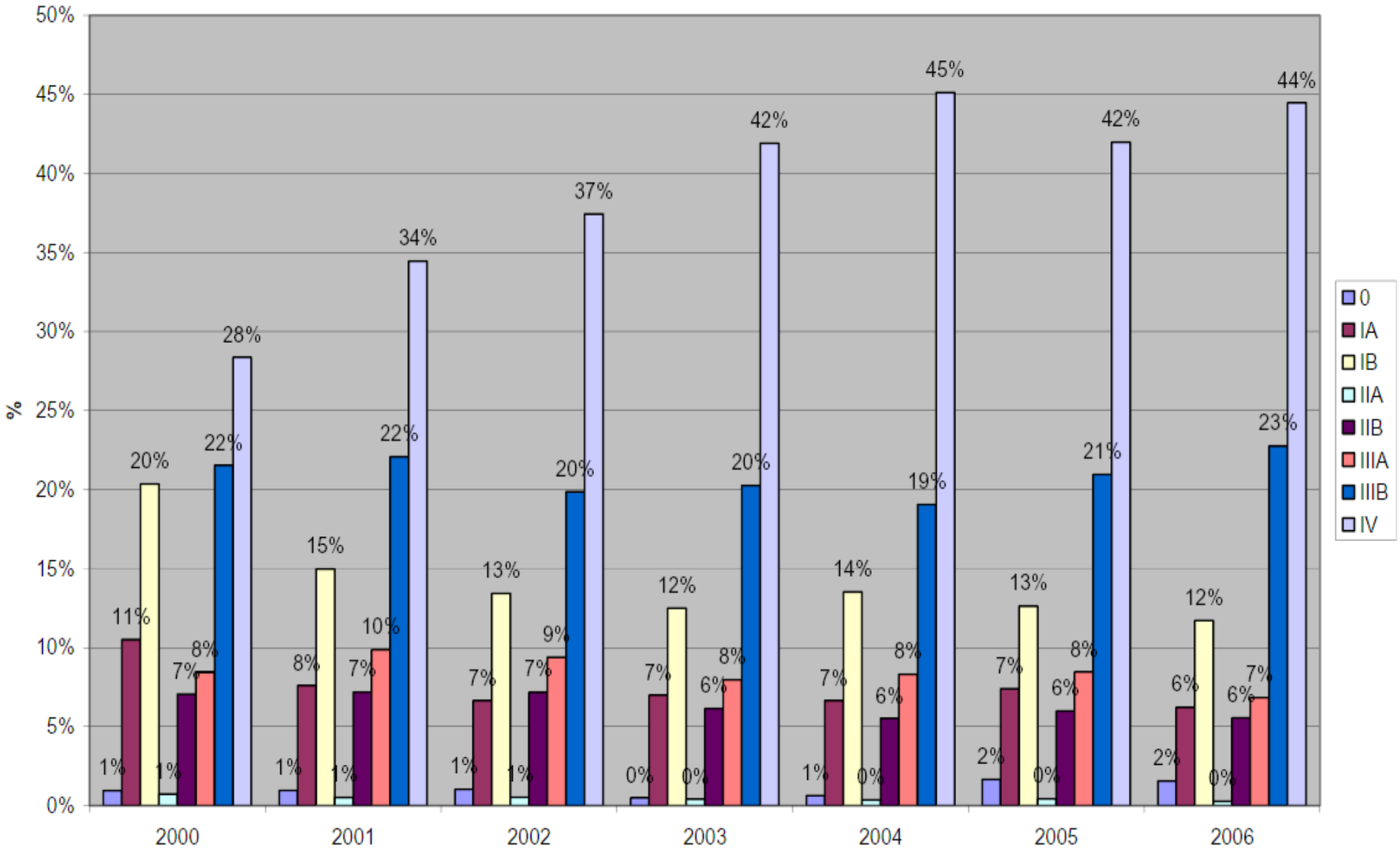
Lunge Carcinom



Stadium ved diagnose

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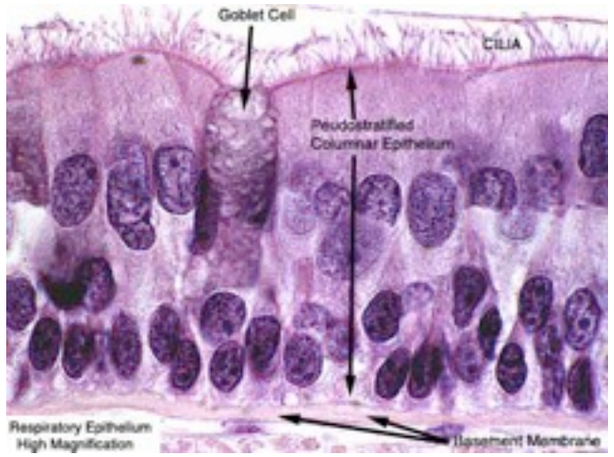
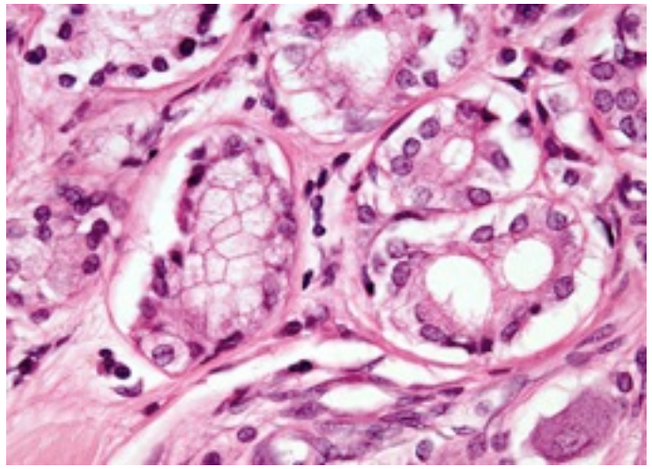
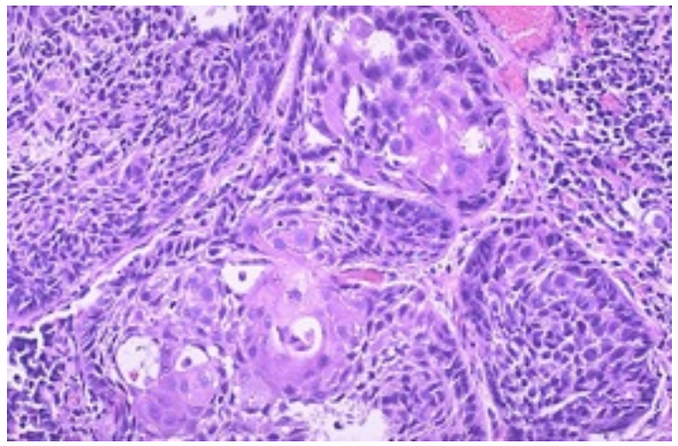
Lunge Carcinom

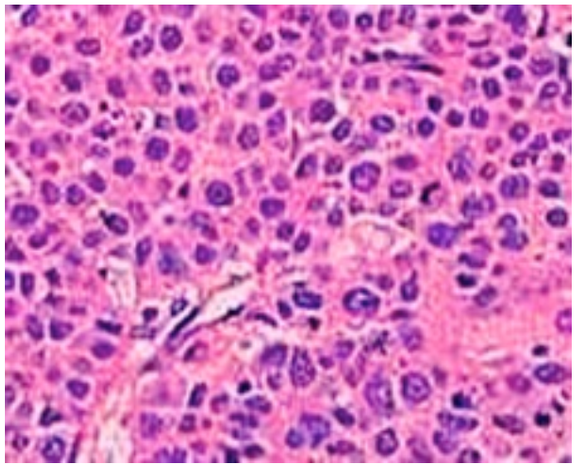




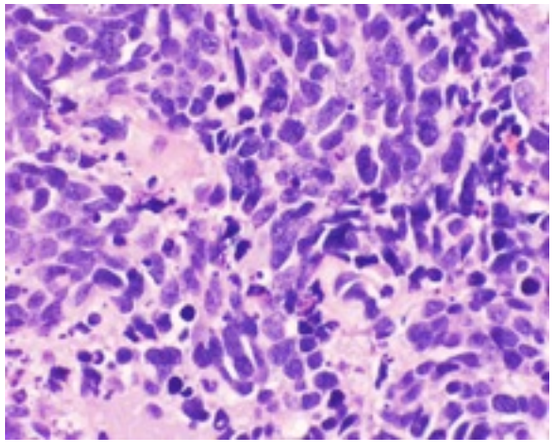
Adenocarcinom



Planocellulært carcinom



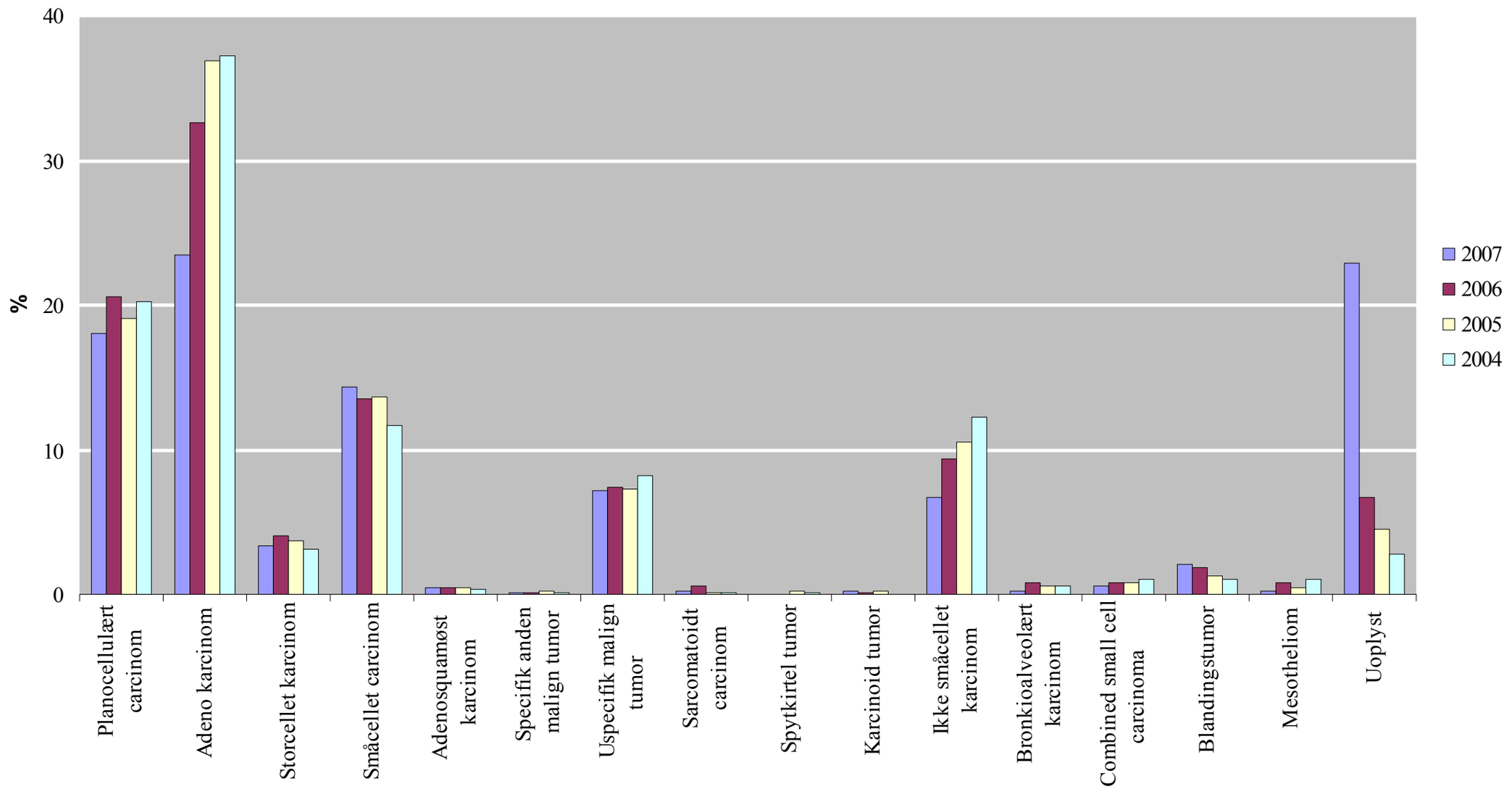
Storcellet carcinom



Småcellet carcinom

Non Small Cell Lung Carcinoma (NSCLC)
Ikke Småcellet carcinom

8.7.3 Fig. Patologityper per år - totalt:



Udredning

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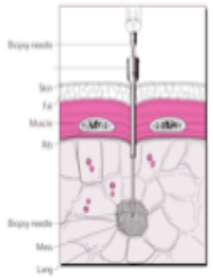
Central tumor

Periferal tumor

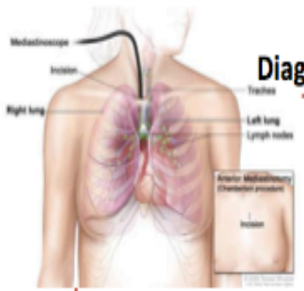
Tumor Diagnosis

Bronchial brushing,
Bronchial lavage,
Tissue Biopsi

Fine- or
Course needle
biopsi



Tumor type



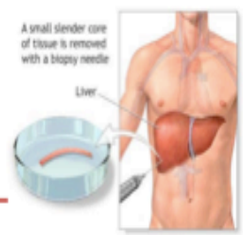
Diagnosis of metastases

Broncho- mediastinoskopi
including tissue biopsi
from mediastinal lymfnodes

N

M

Fine- or courseneedle biopsi
from metastasis suspekte
areas (found by CT eller PET scan)



70% Not operabel

Operabel 30%

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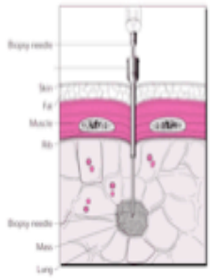
Central tumor

Periferal tumor

Tumor Diagnosis

Bronchial brushing,
Bronchial lavage,

Fine- or
Course n
biopsi



Tumor type

Diagnosis of metastases

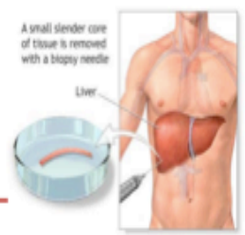
Fine needle
aspiration

EBUS
EUS

N

M

areas (found by CT eller PET scan)



70%

Not operabel

Operabel

30%

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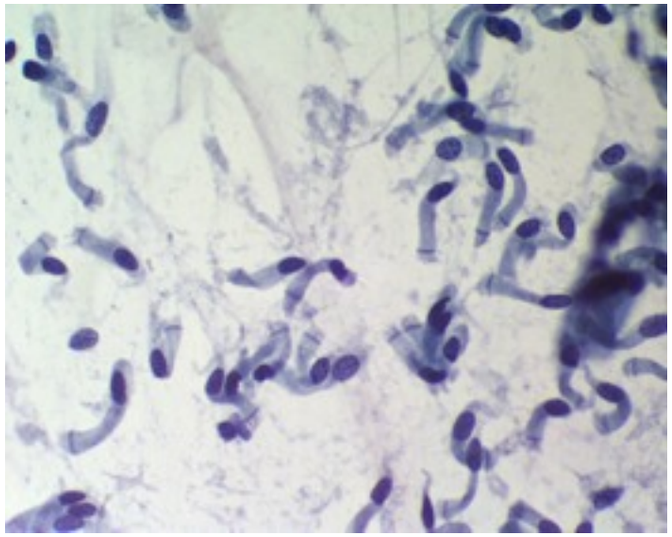
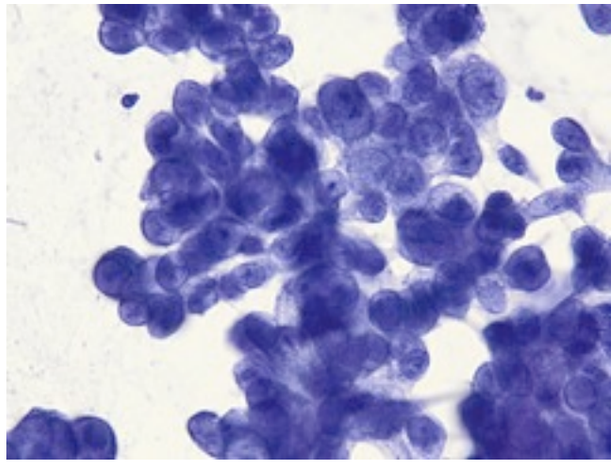
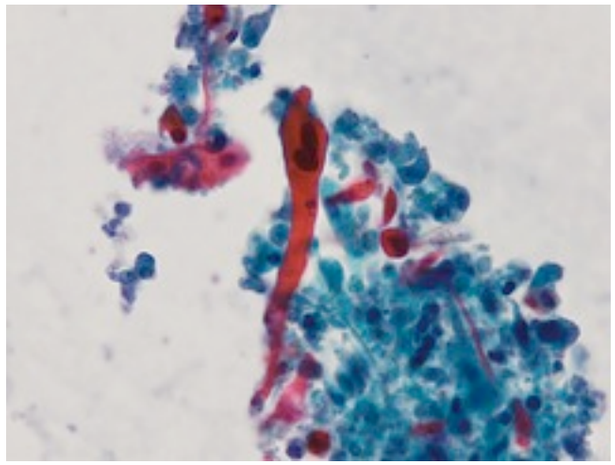
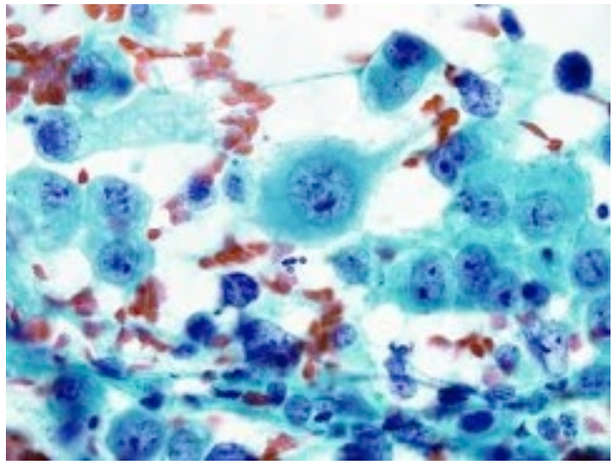




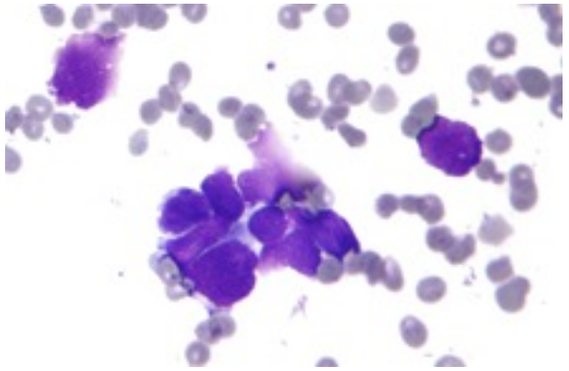
Adenocarcinoma



Squamous carcinoma



Large cell carcinoma



Small cell carcinoma

Non Small Cell Lung Carcinoma
(NSCLC)

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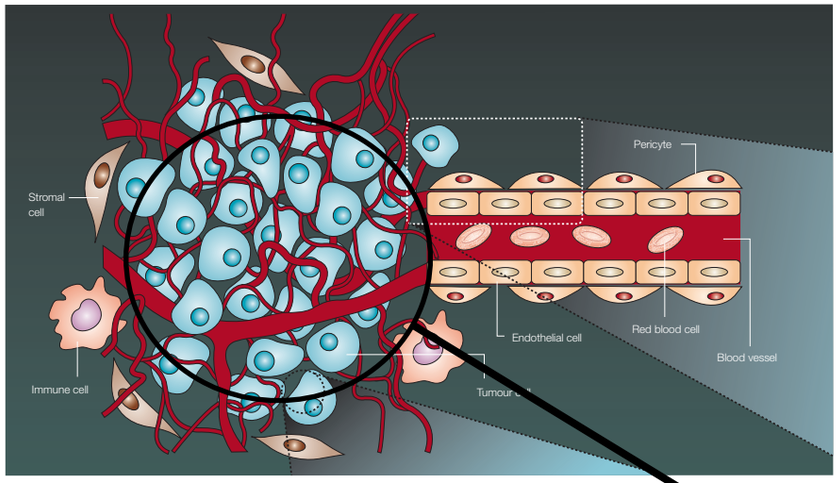

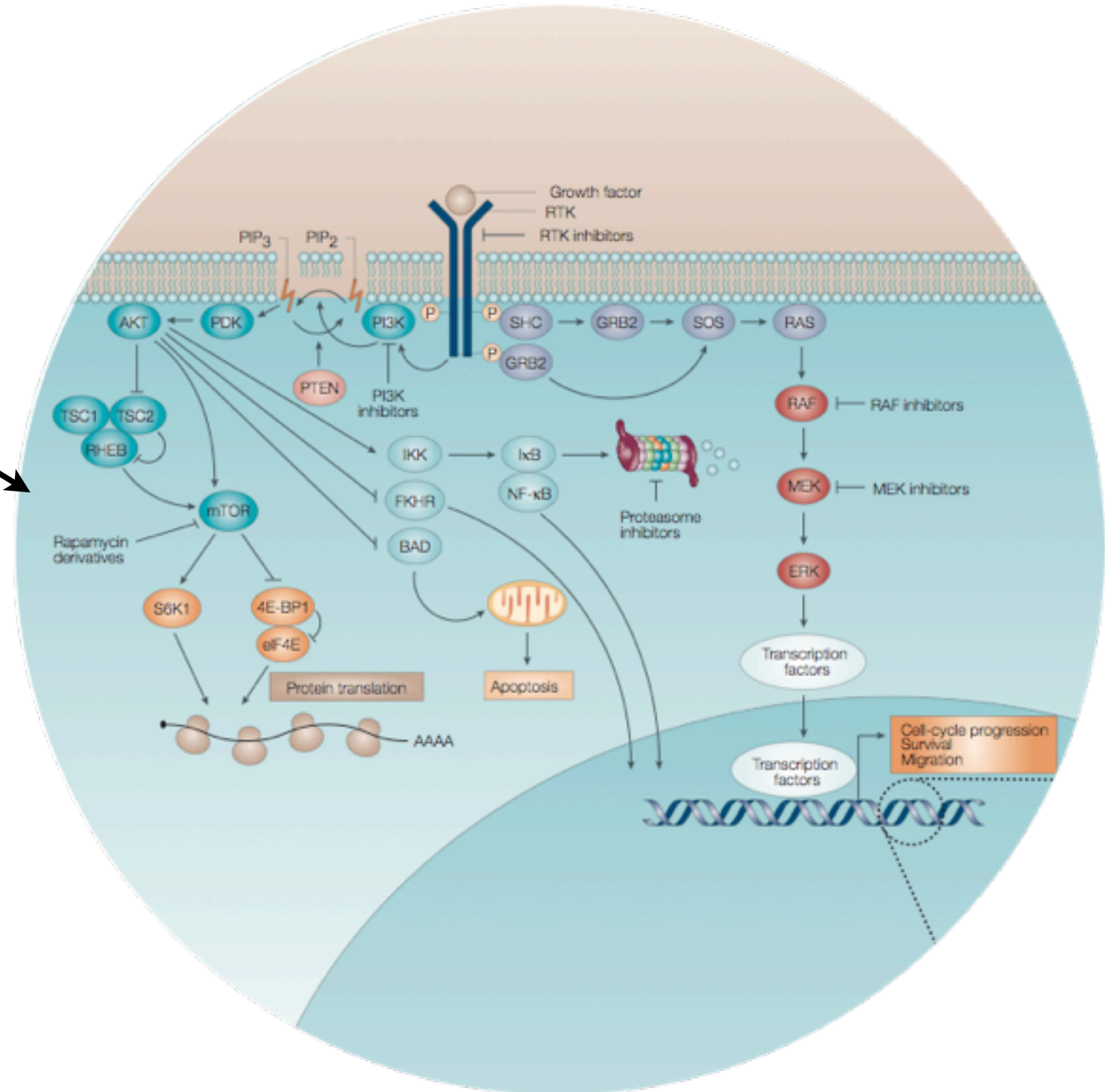

Pathways of cancer

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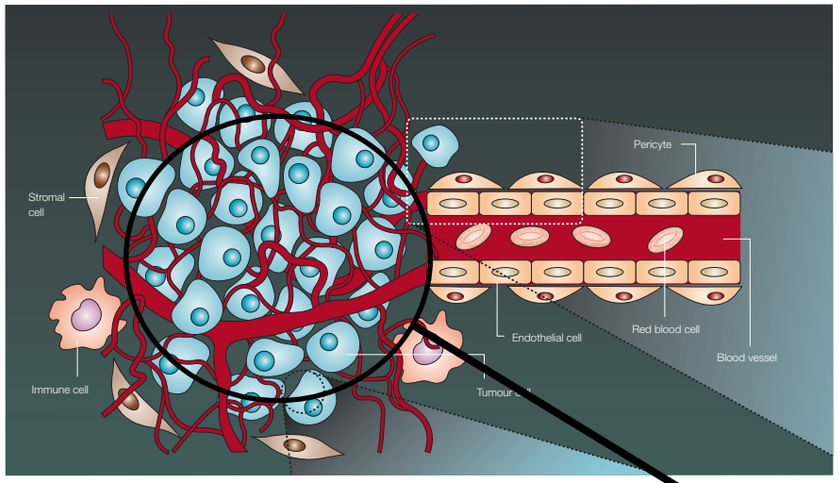

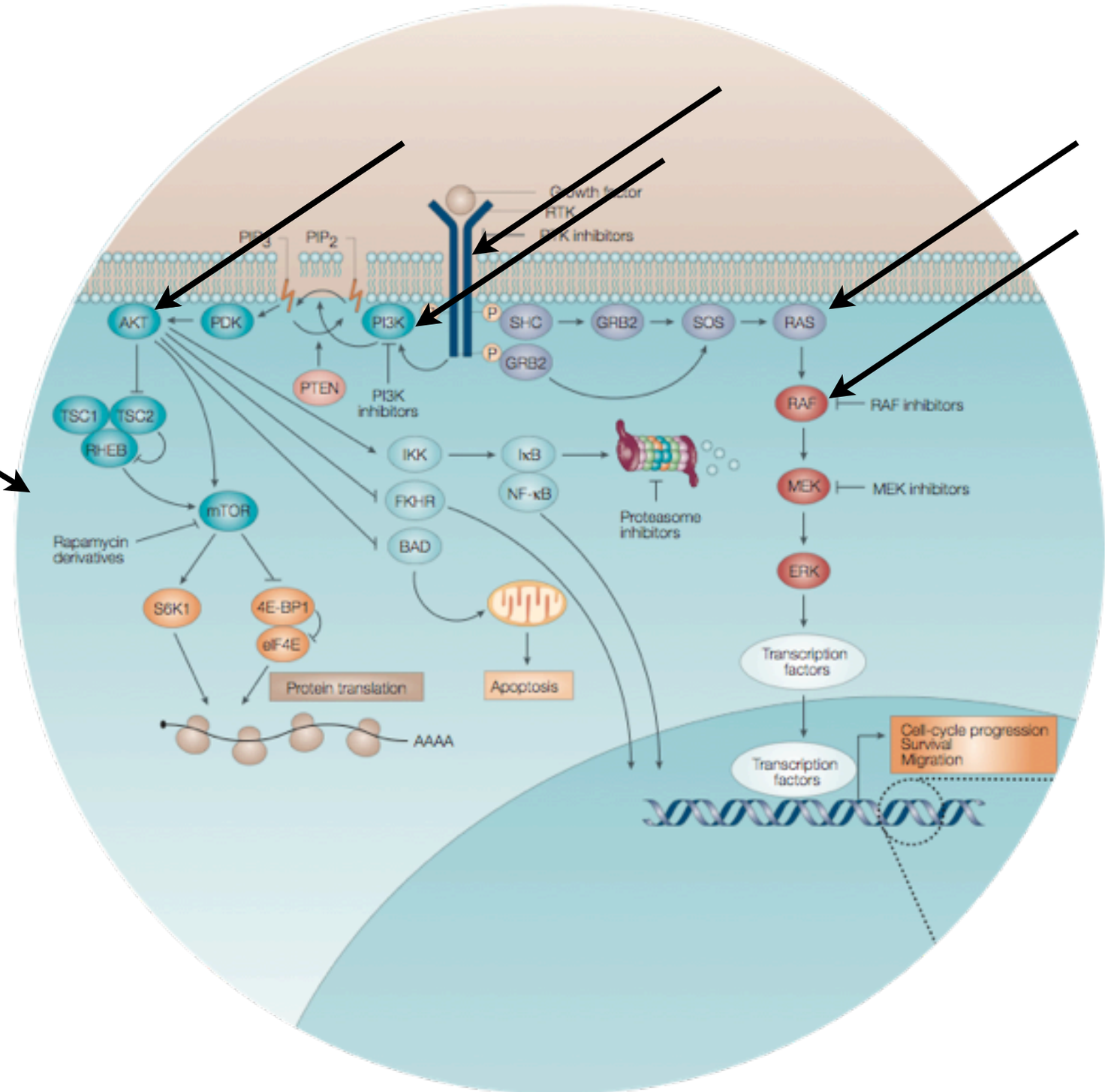

oncogenes

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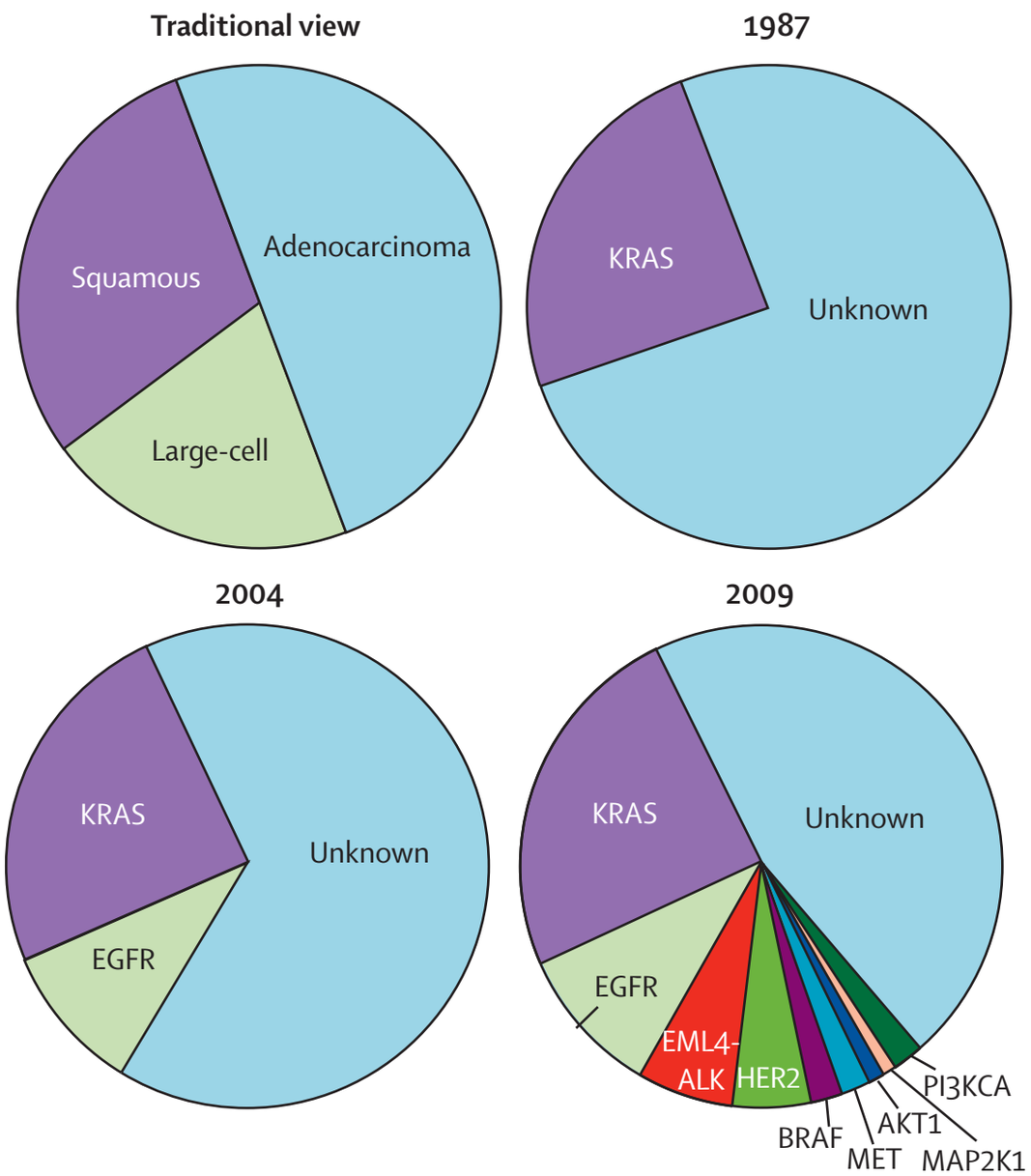

Driver mutation

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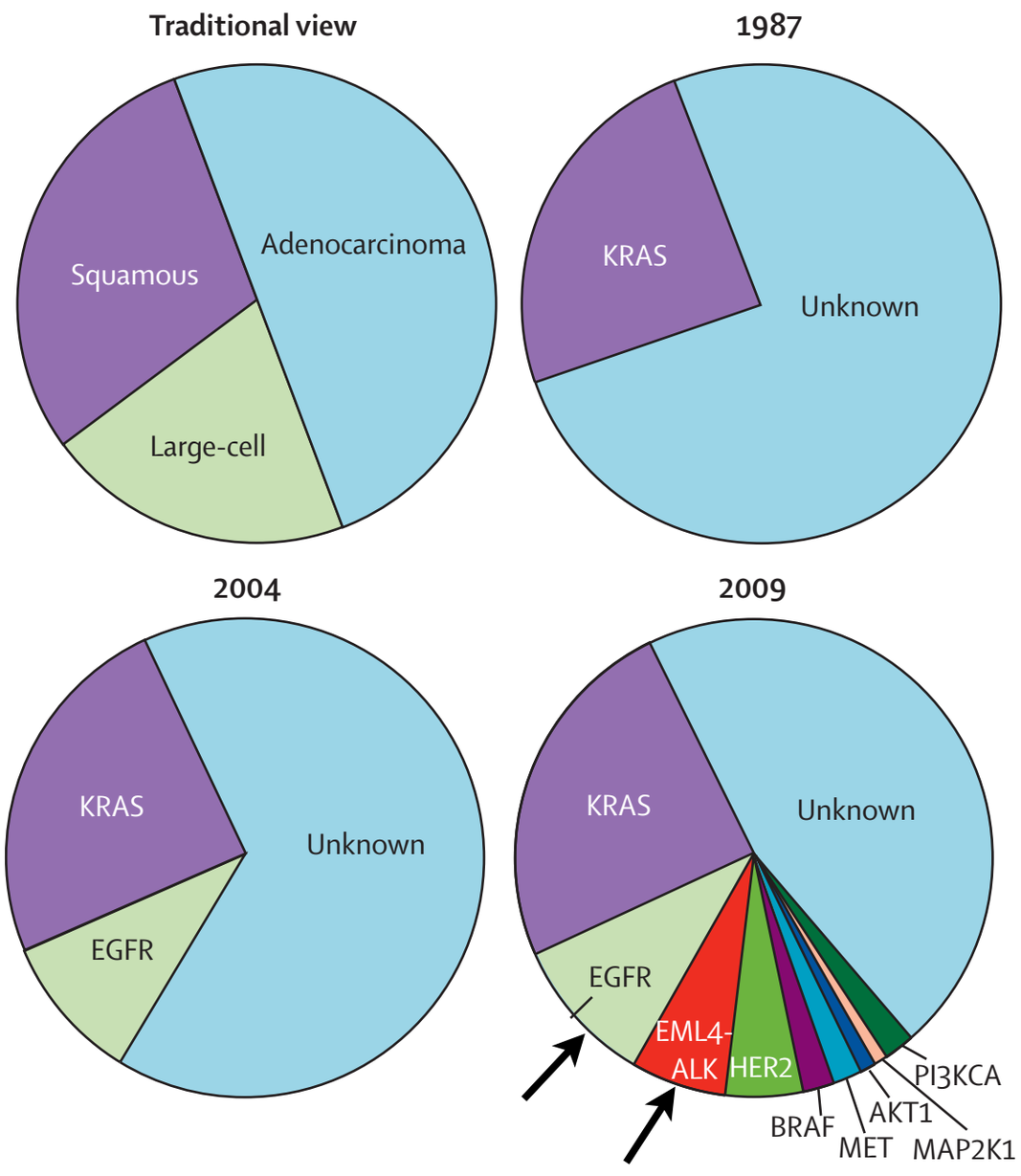

Driver mutation

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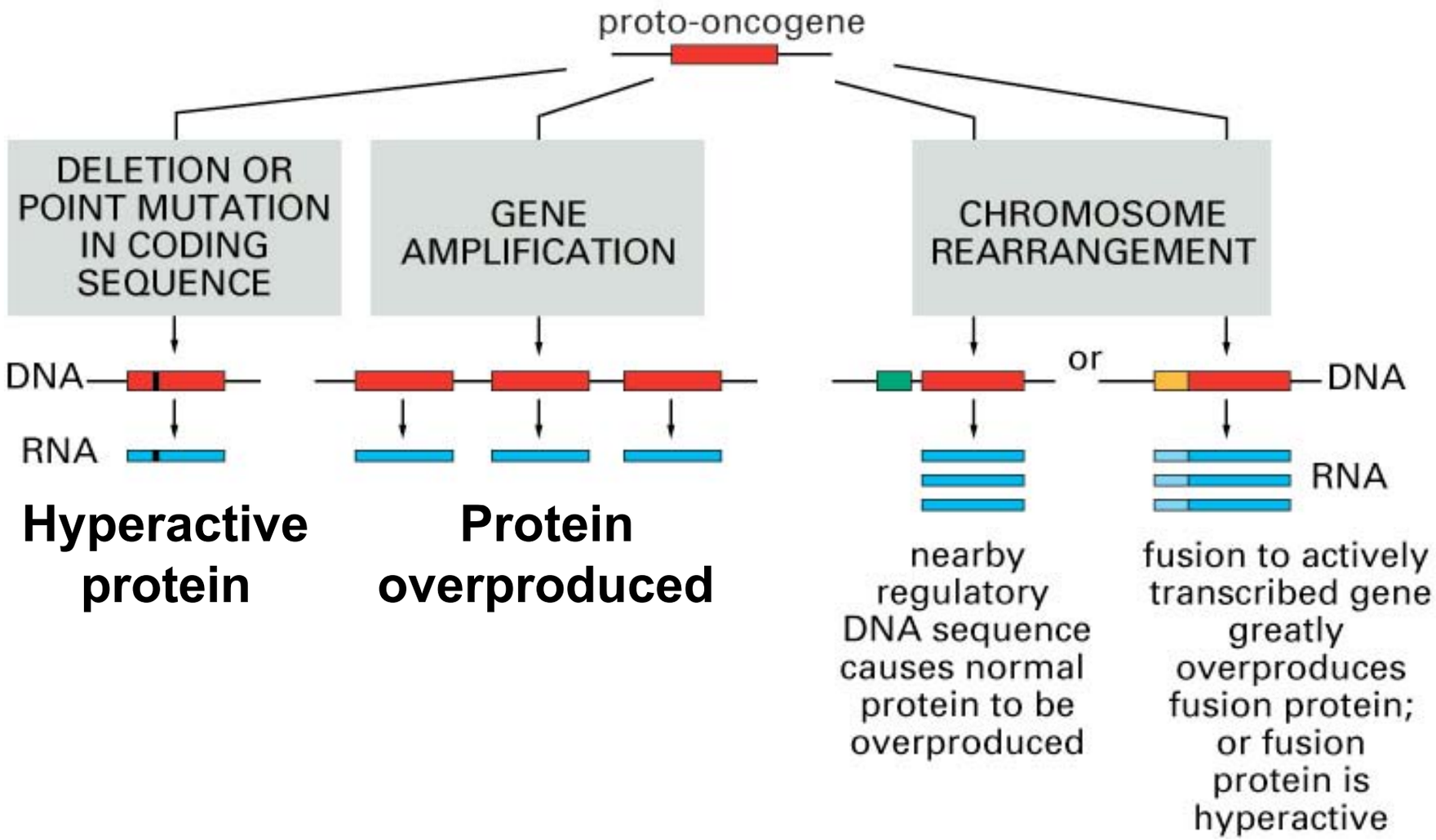

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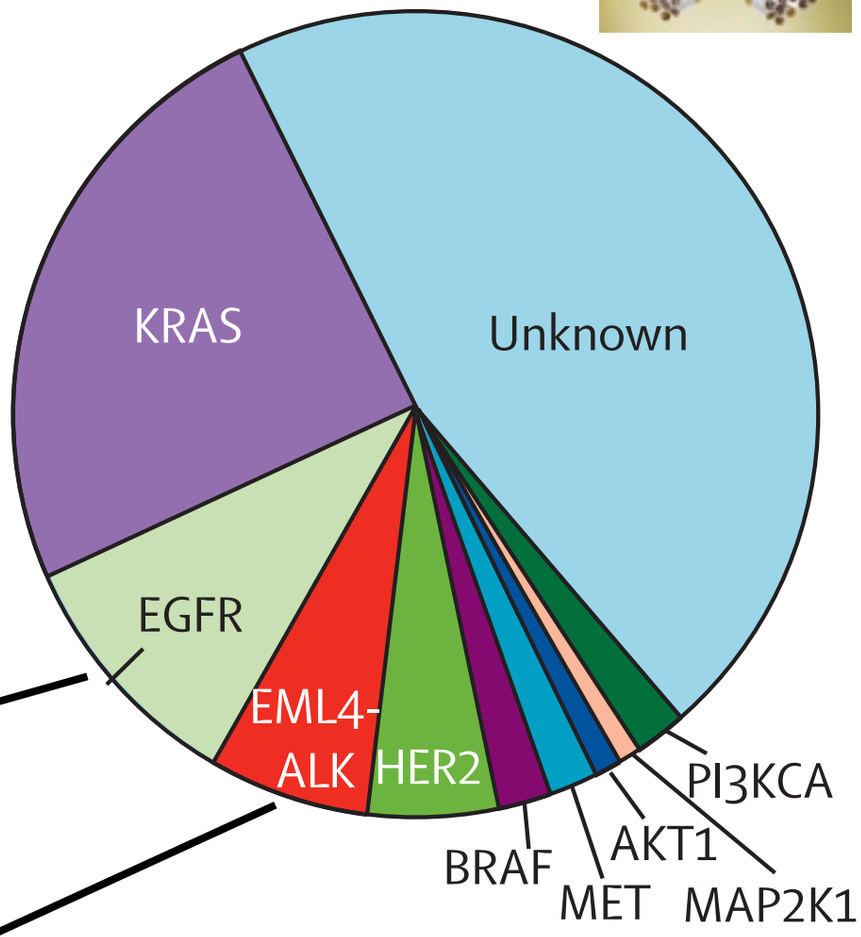
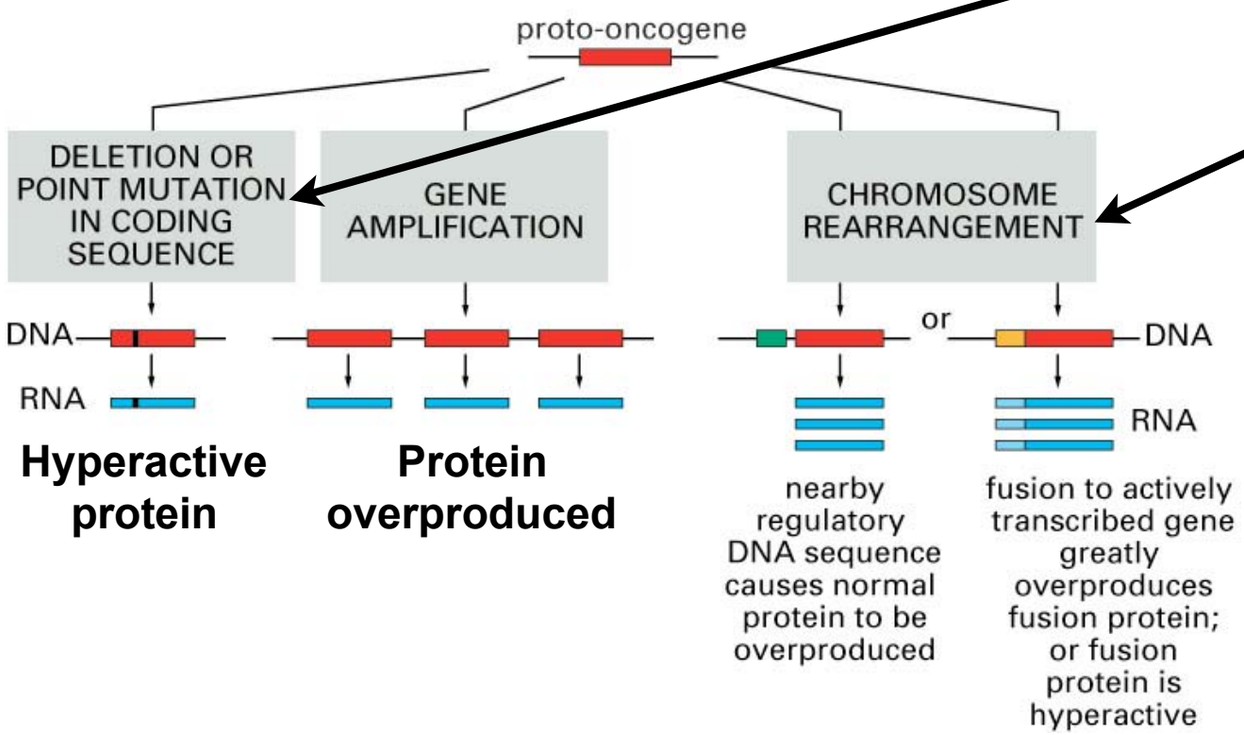
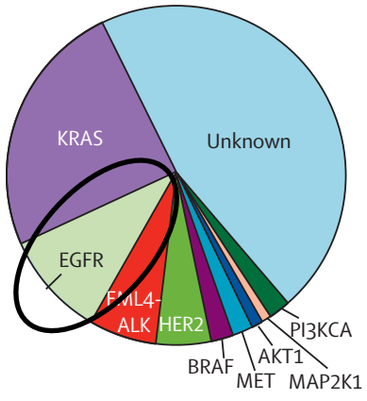
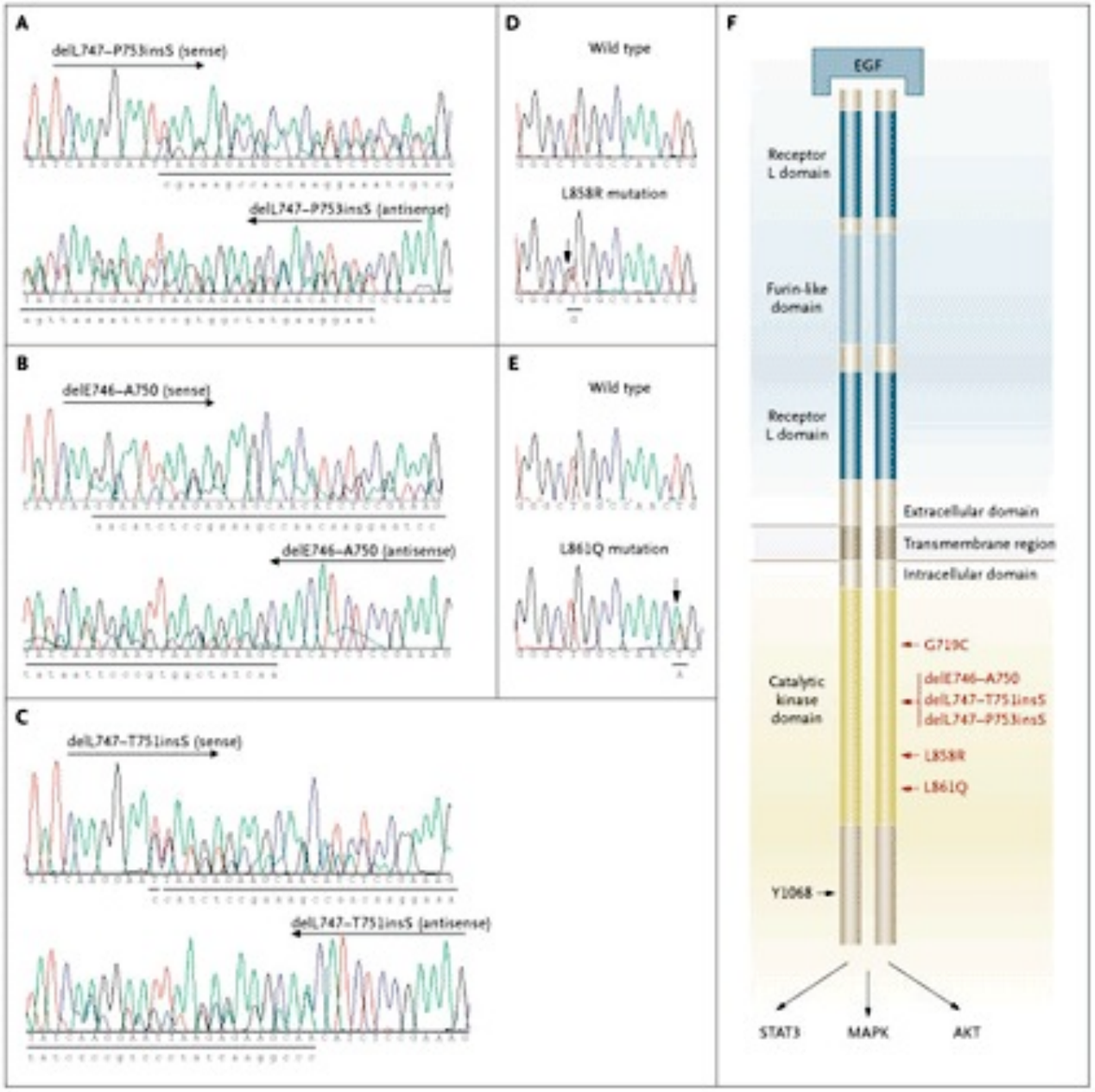




EGFR


KRAS
Unknown
EGFR
EML4-ALK
HER2
BRAF
MET
AKT1
MAP2K1
PI3KCA


A
delL747–P753insS (sense)
delL747–P753insS (antisense)
B
delE746–A750 (sense)
delE746–A750 (antisense)
C
delL747–T751insS (sense)
delL747–T751insS (antisense)
D
Wild type
L858R mutation
E
Wild type
L861Q mutation
F
EGF
Receptor L domain
Furin-like domain
Receptor L domain
Extracellular domain
Transmembrane region
Intracellular domain
Catalytic kinase domain
G719C
delE746–A750
delL747–T751insS
delL747–P753insS
L858R
L861Q
Y1068
STAT3
MAPK
AKT

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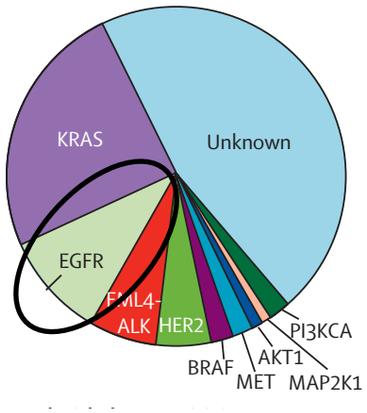
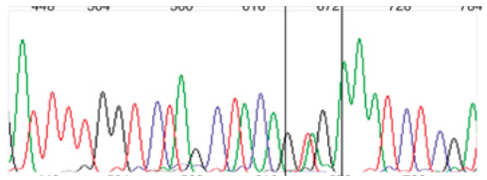
EGFR





Tissue section

DNA-purification

DNA(template)

PCR

Analysis

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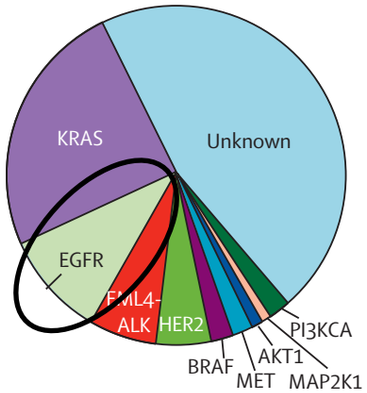
EGFR



Tissue section

DNA-purification

DNA(template)

PCR

Analysis

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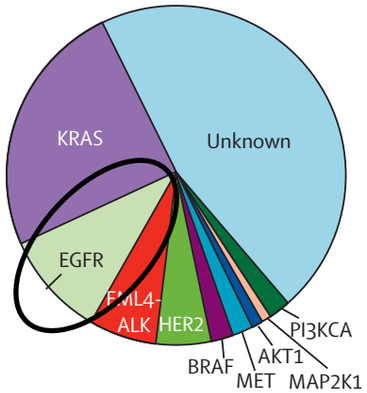
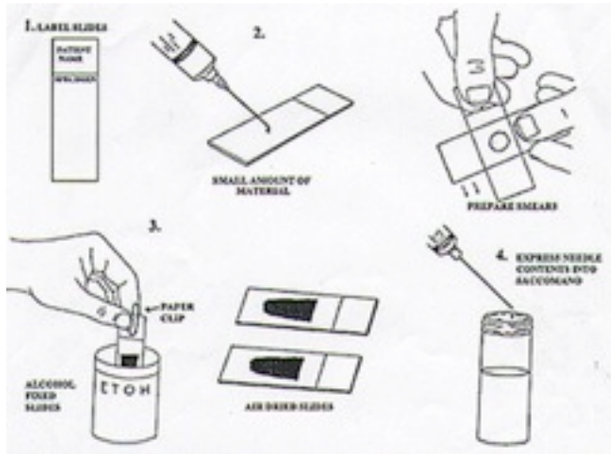
EGFR





DNA(template) → *PCR* → *Analysis*

DNA-purification

Cytology specimen

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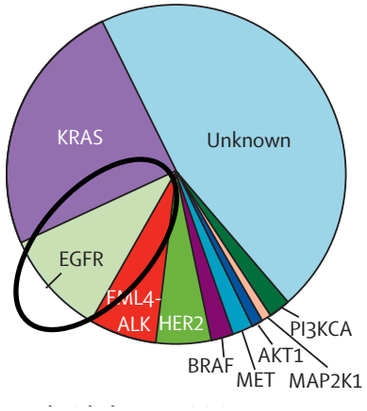
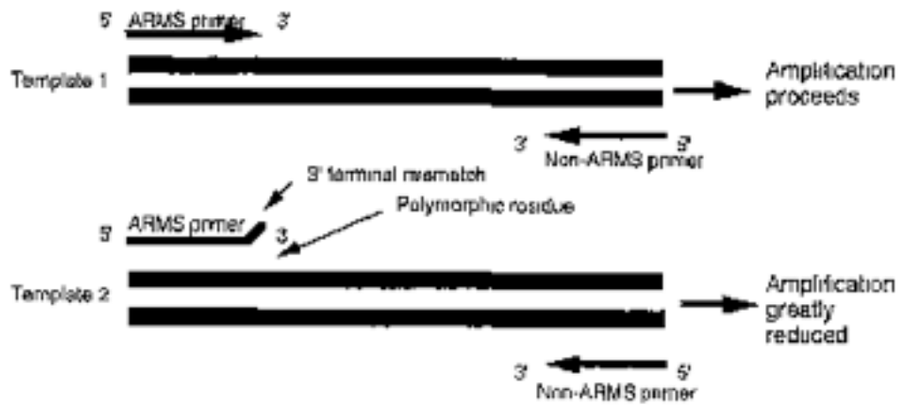
EGFR



Amplification Refractory Mutation System

Primer fits mutated seqence

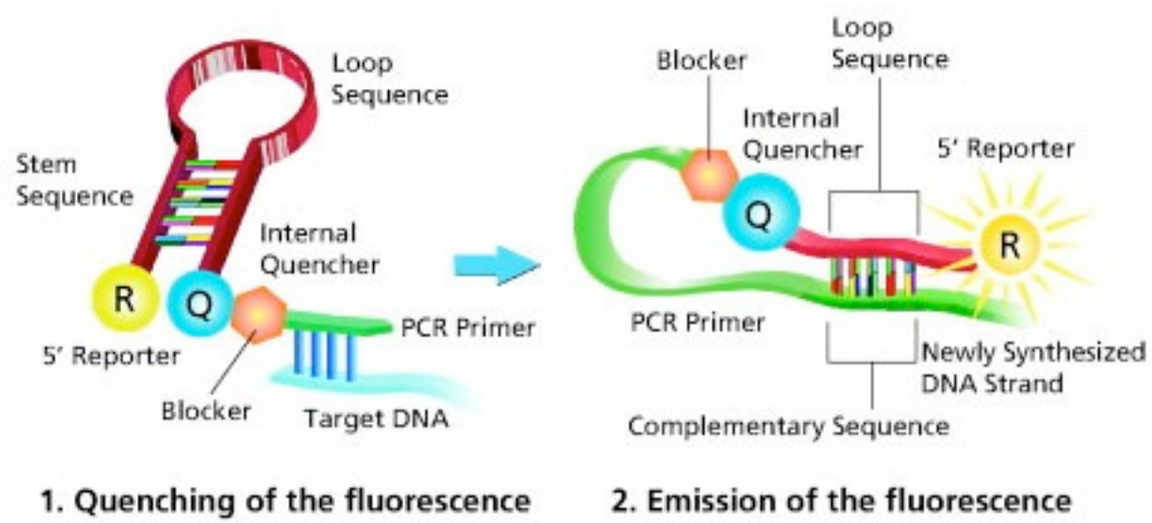


Mutated DNA

Wild Type DNA

Fig. 1

Scorpion probe



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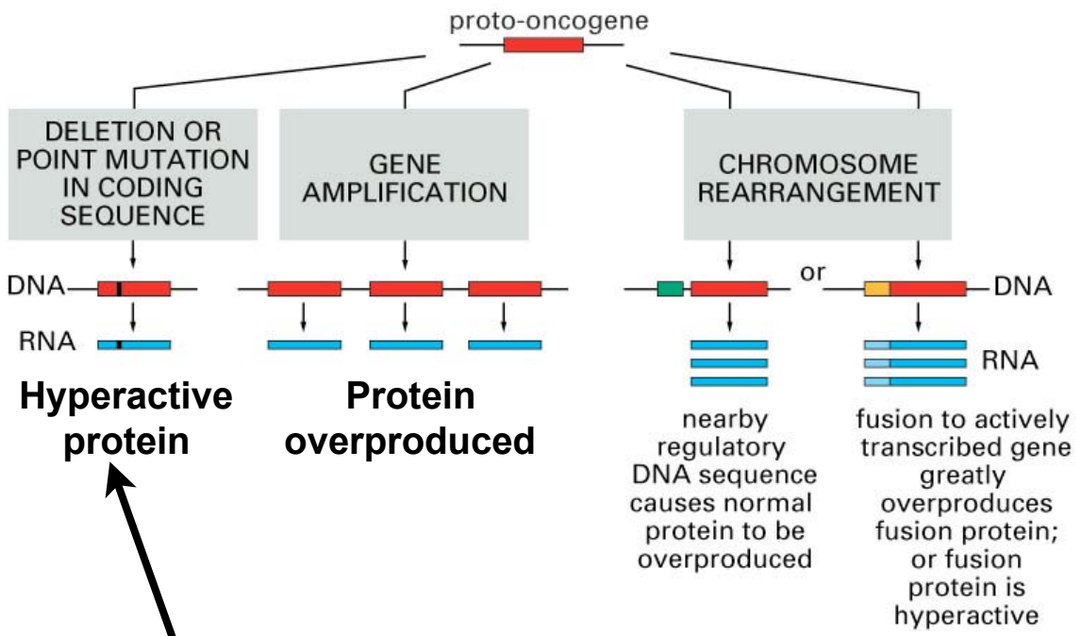
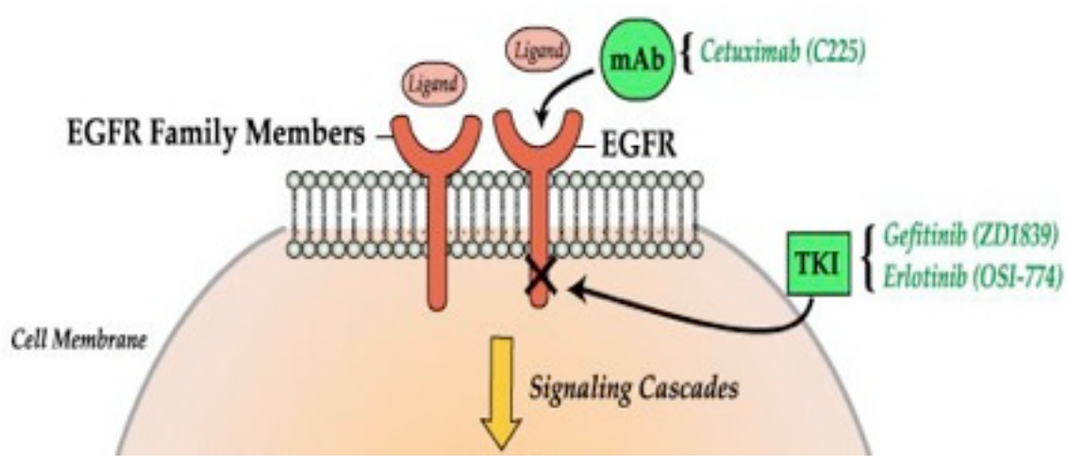


hvis muteret



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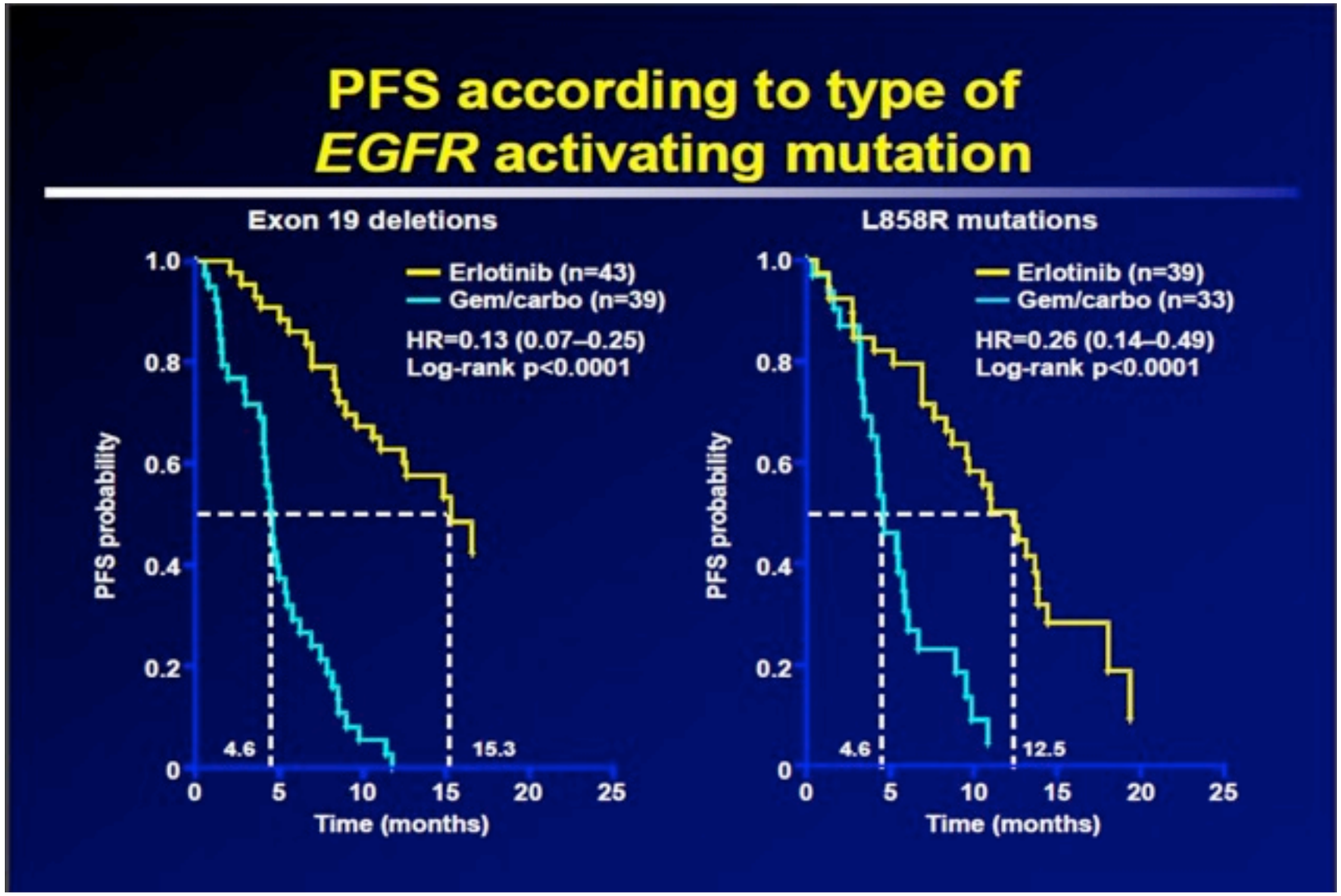

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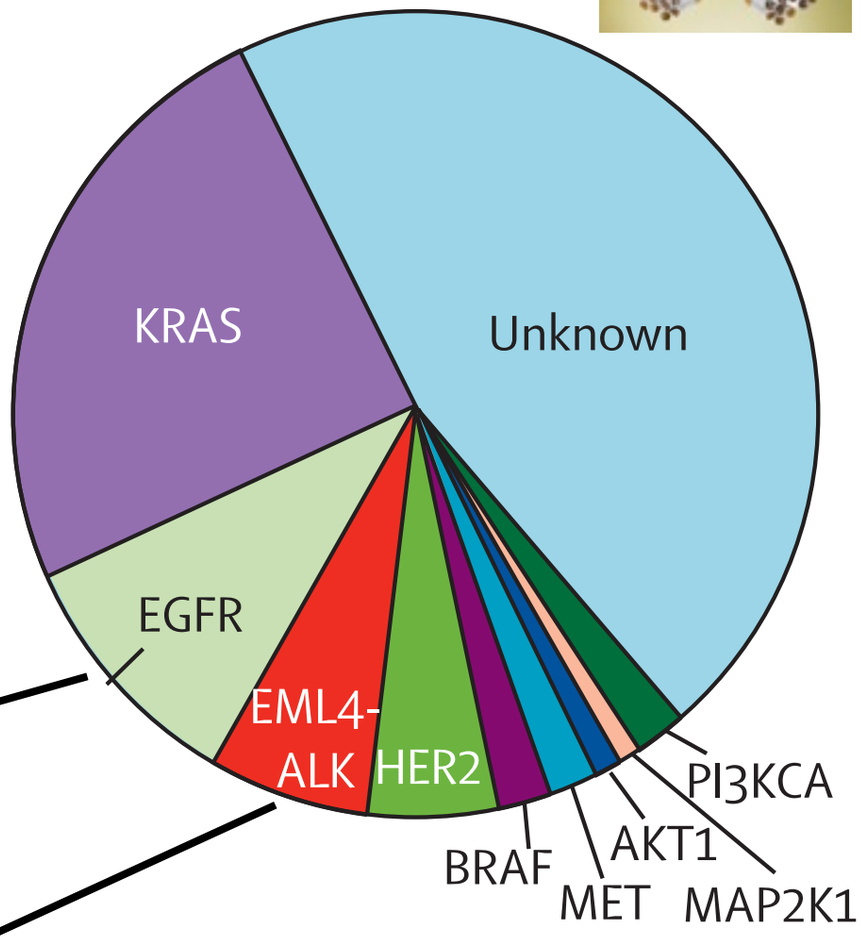
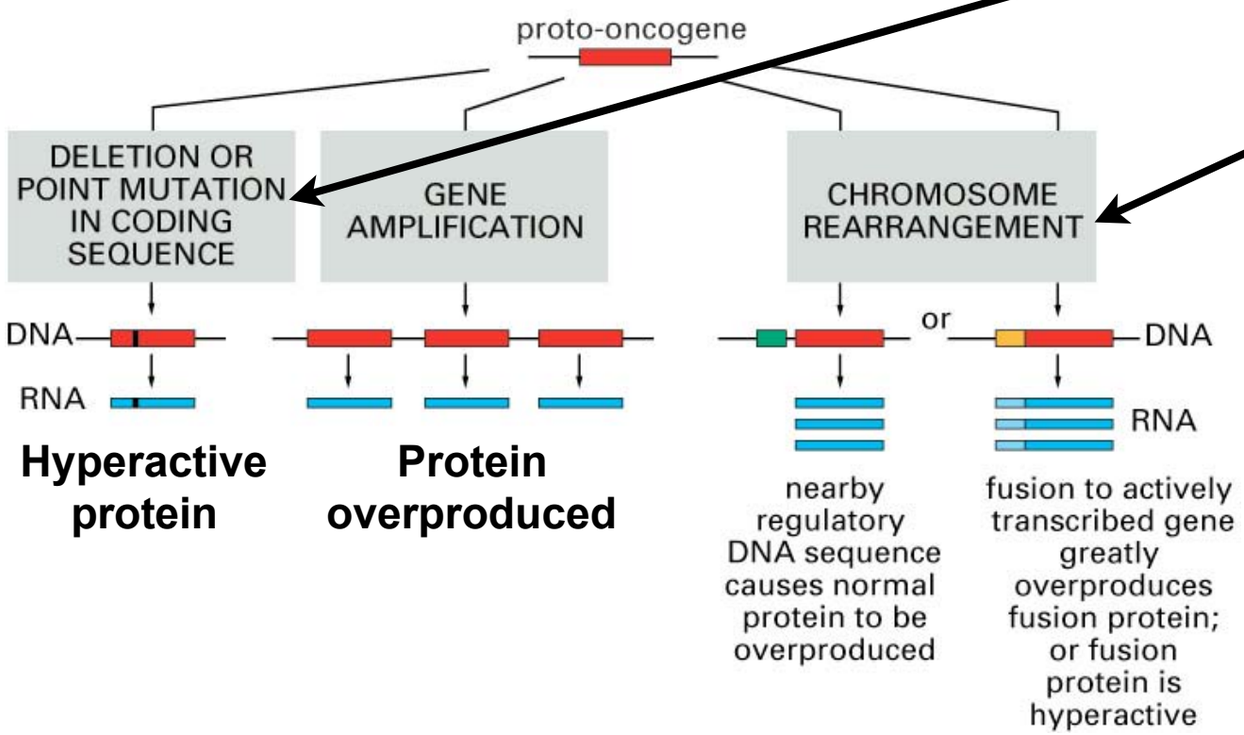
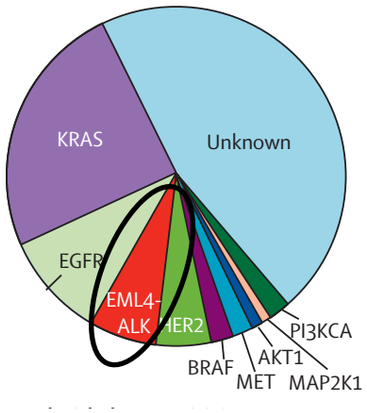
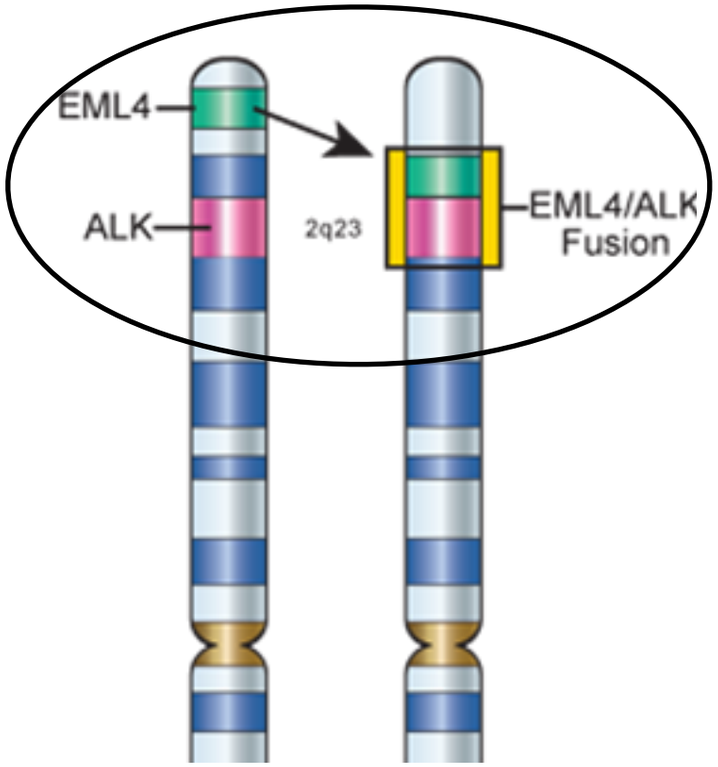
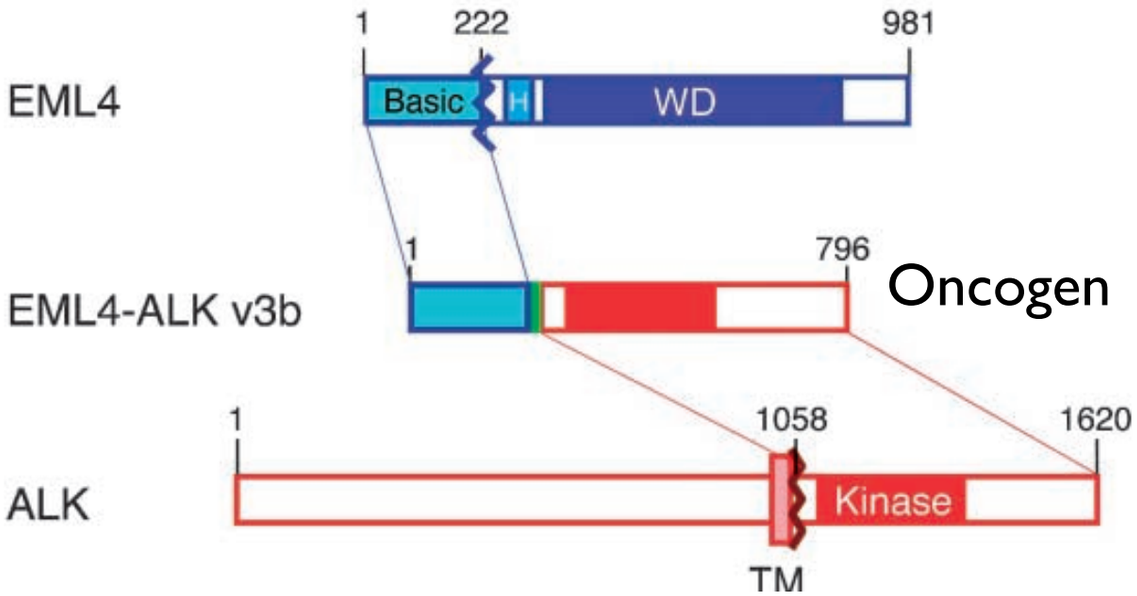




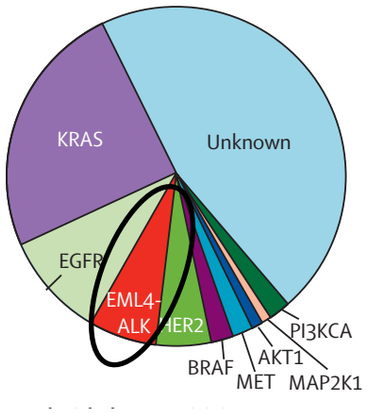
EML4-ALK

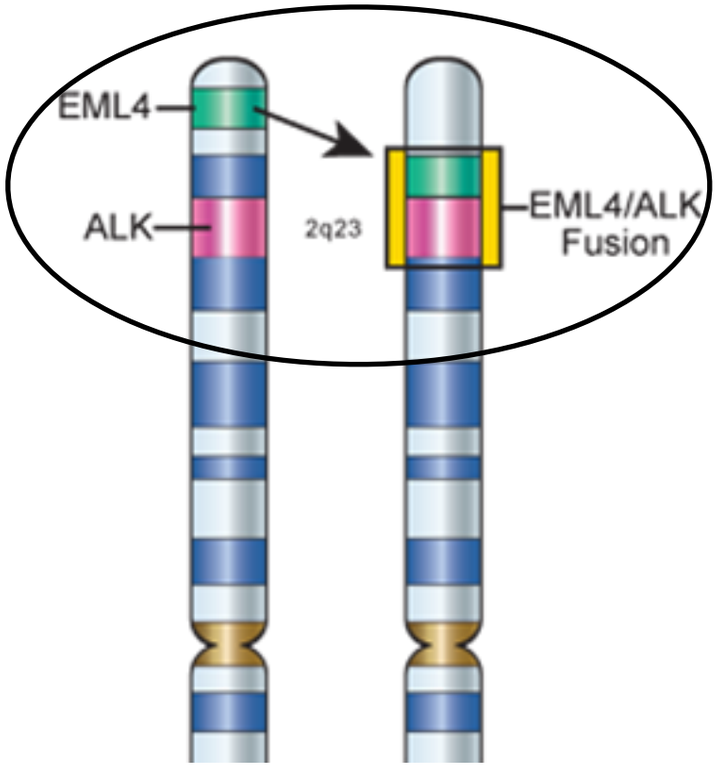

KRAS
Unknown
EGFR
EML4-ALK
HER2
BRAF
MET
AKT1
MAP2K1
PI3KCA

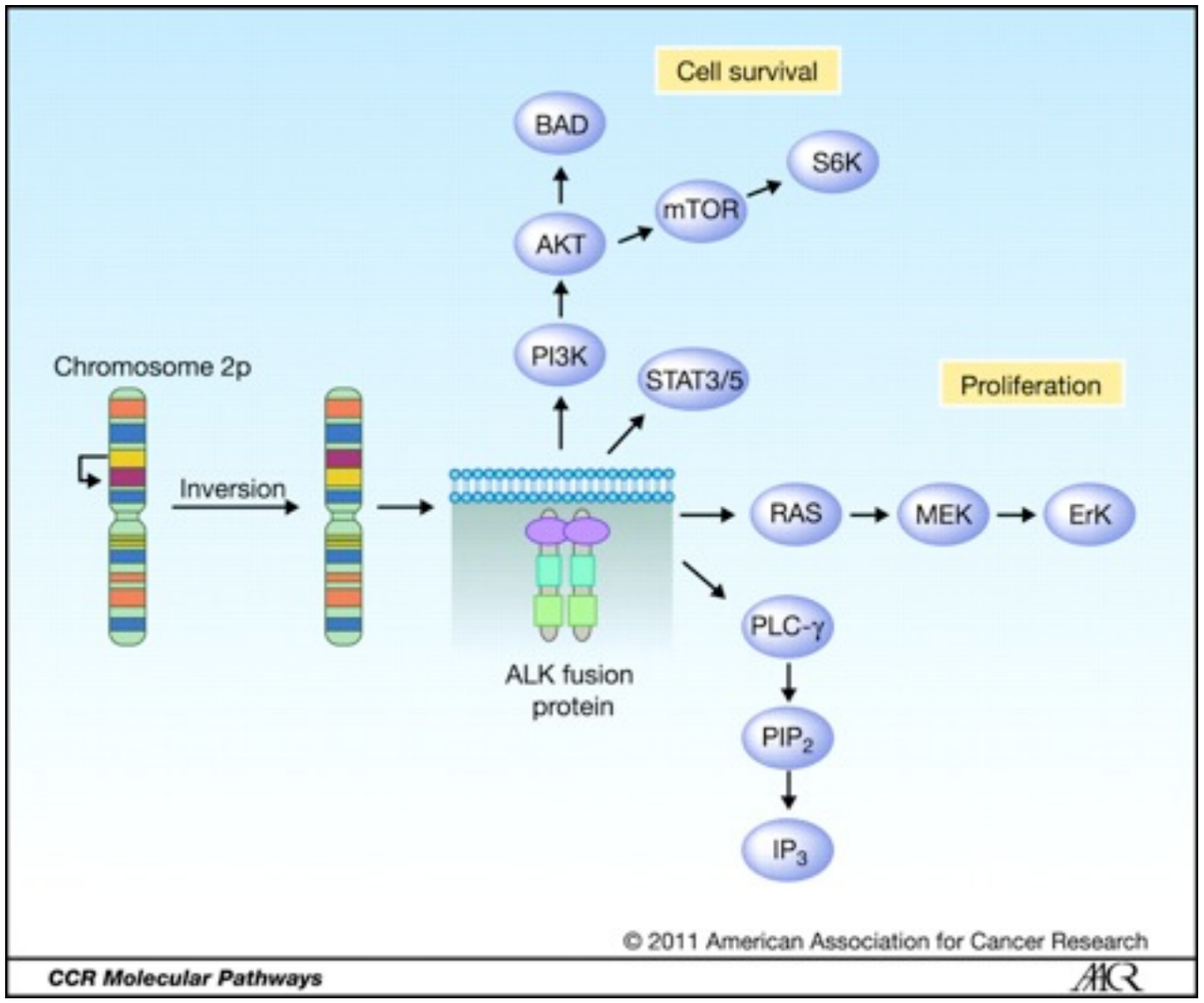

EML4
ALK
2q23
EML4/ALK
Fusion


EML4
1
222
981
Basic
H
WD
EML4-ALK v3b
1
796
Oncogen
ALK
1
1058
1620
Kinase
TM

EML4-ALK


KRAS
Unknown
EGFR
EML4-ALK
HER2
BRAF
MET
AKT1
MAP2K1
PI3KCA


EML4
ALK
2q23
EML4/ALK
Fusion


Cell survival
BAD
S6K
mTOR
AKT
PI3K
STAT3/5
Proliferation
Chromosome 2p
Inversion
RAS
MEK
ErK
PLC-γ
ALK fusion protein
PIP2
IP3
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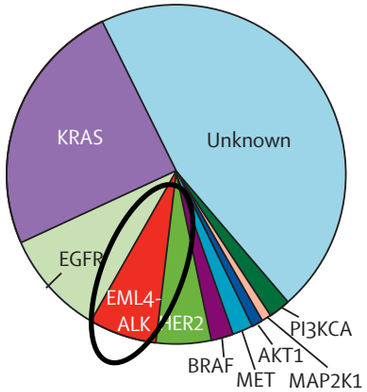
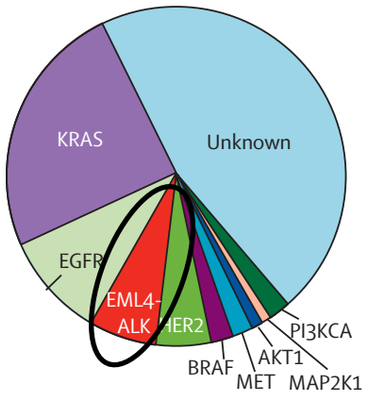
CCR Molecular Pathways
AACR

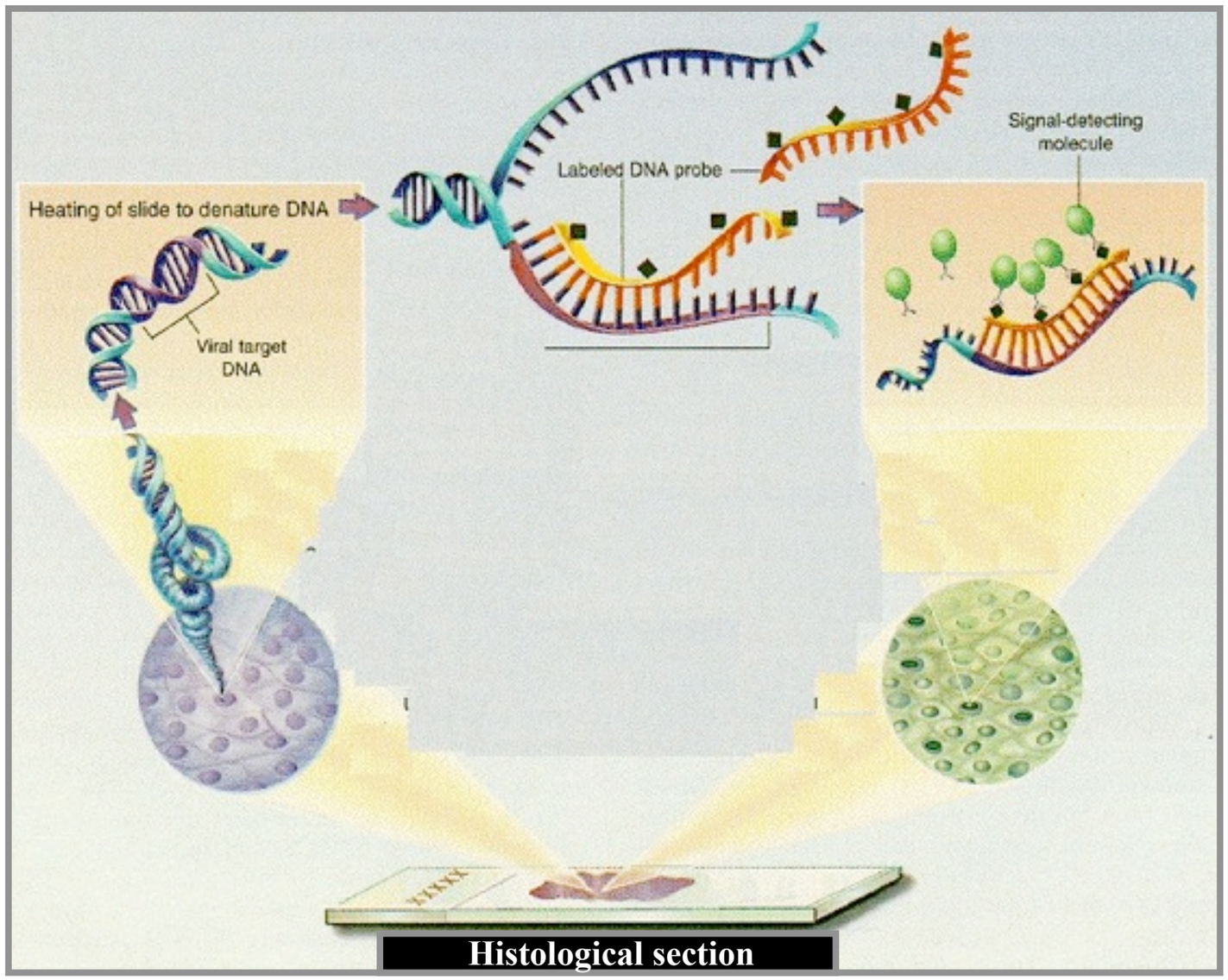
EML4-ALK



In Situ hybridisation

EML4-ALK





In Situ hybridisation

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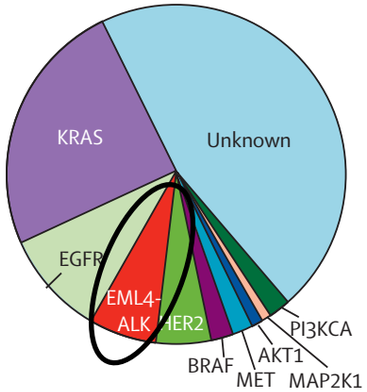
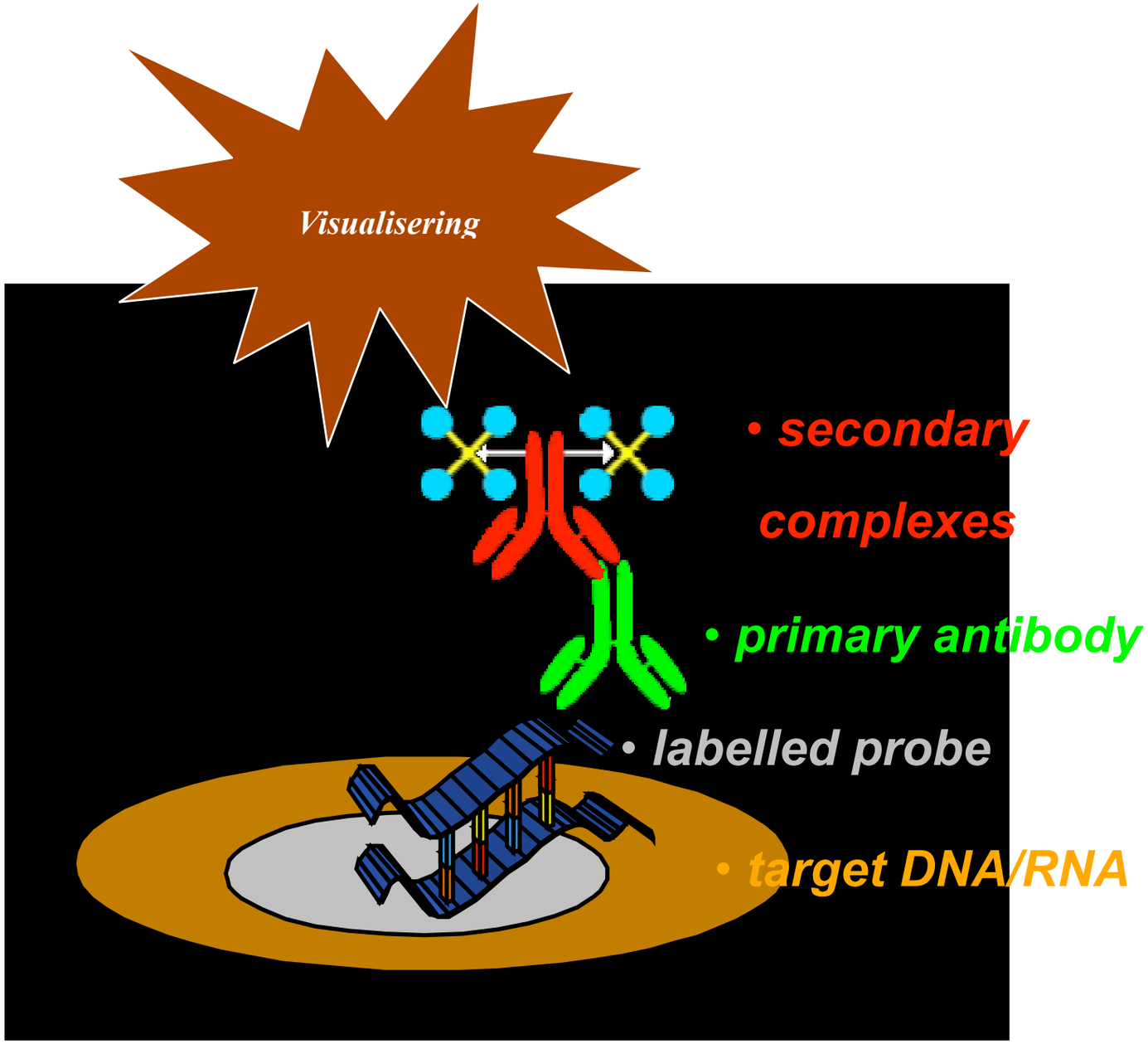
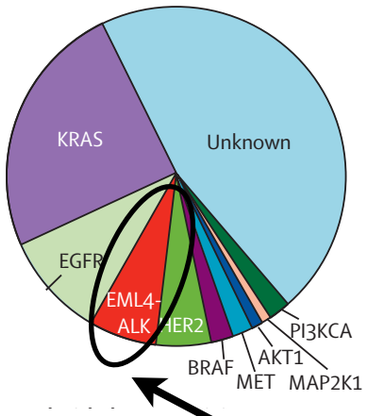
EML4-ALK

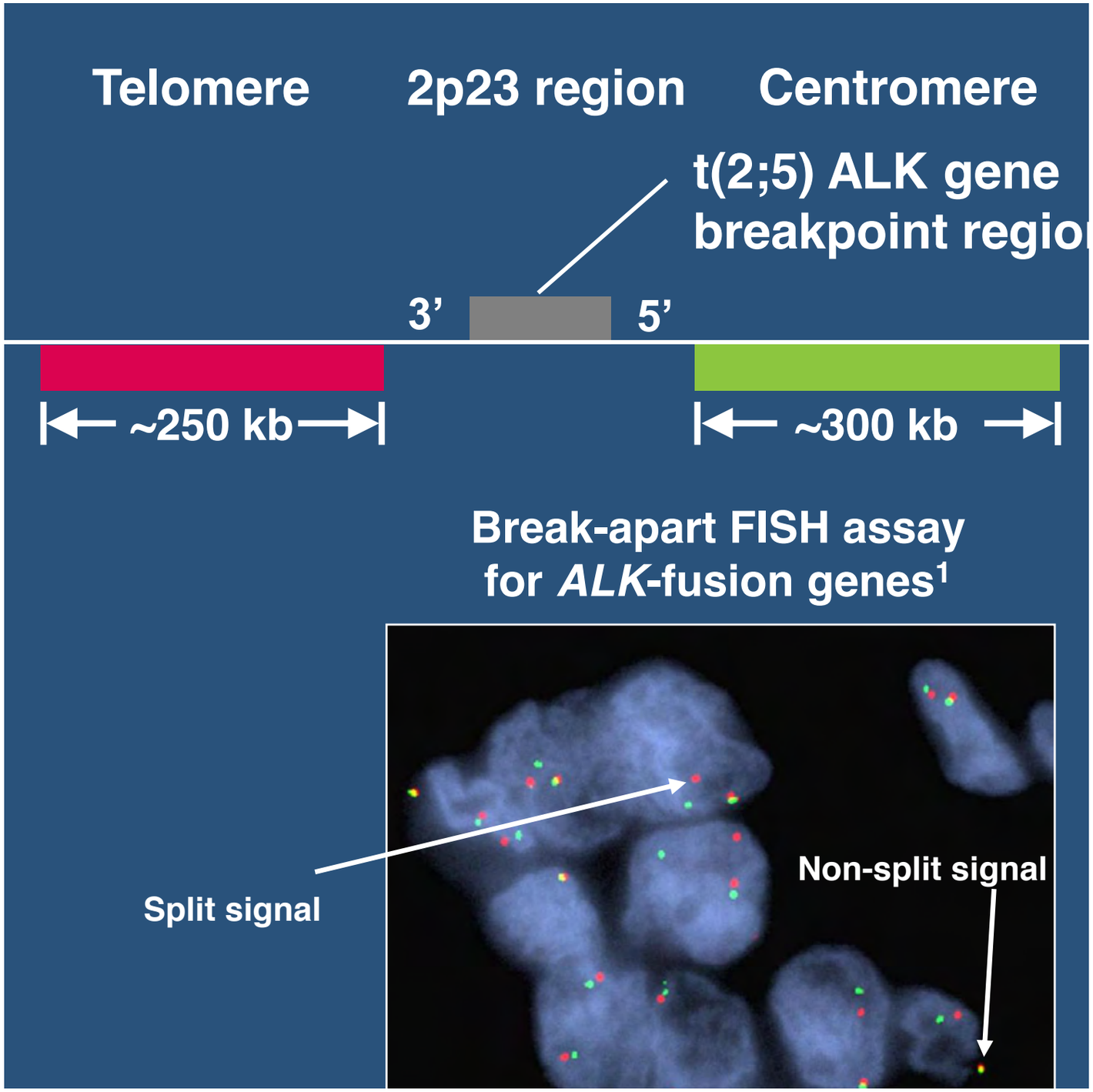




In Situ hybridisation

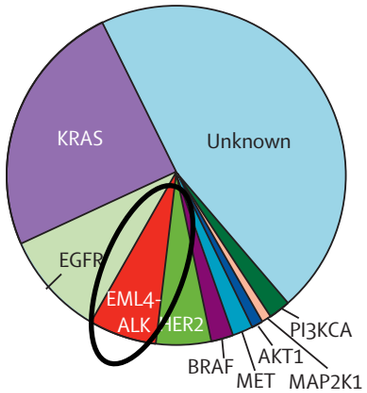
EML4-ALK

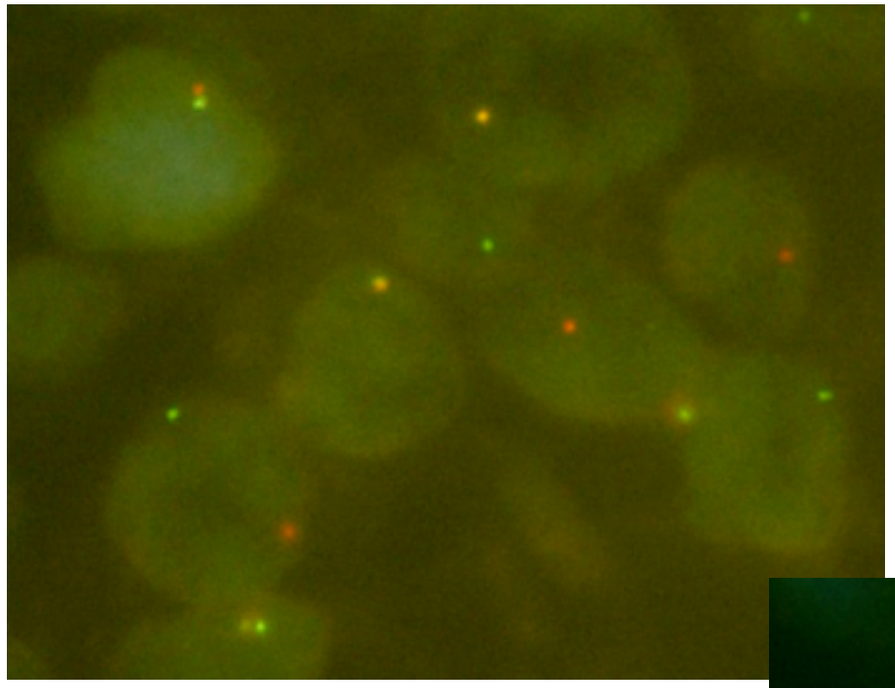




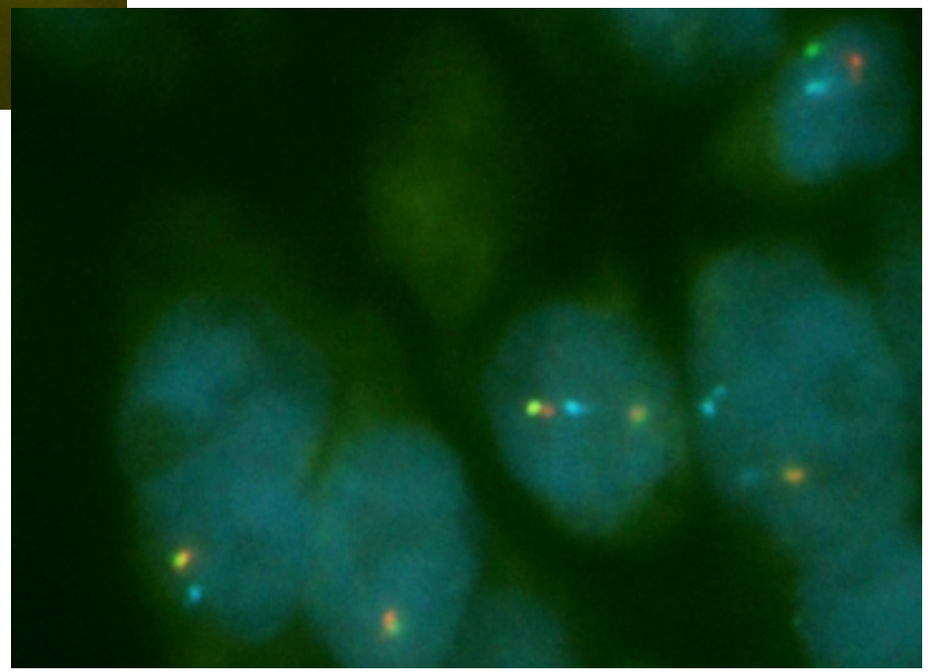
ALK brake apart probe

EML4-ALK





hist



cyt

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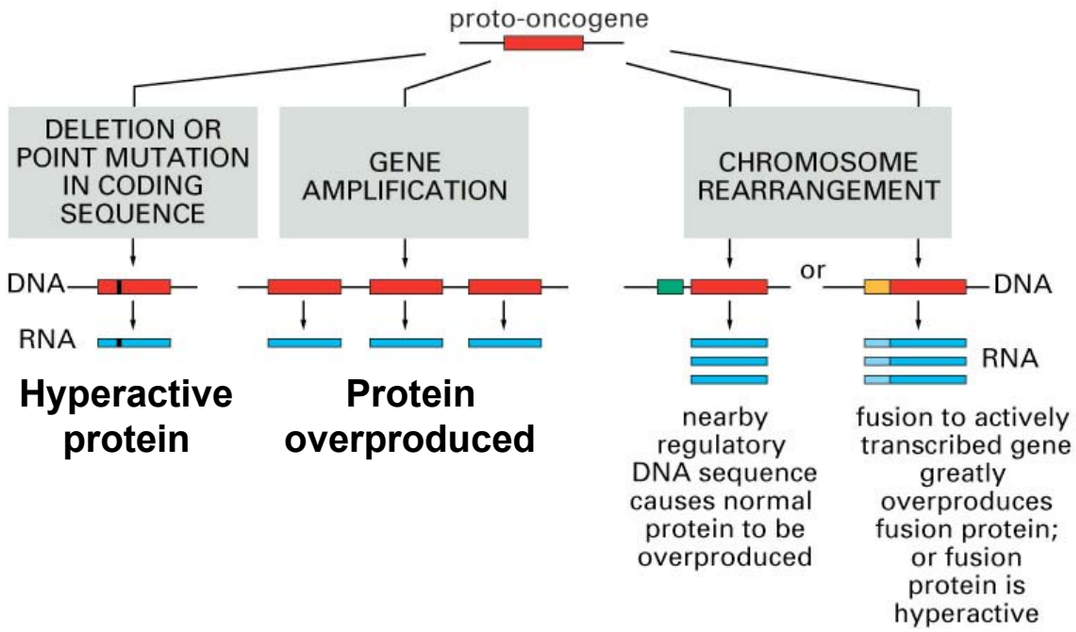
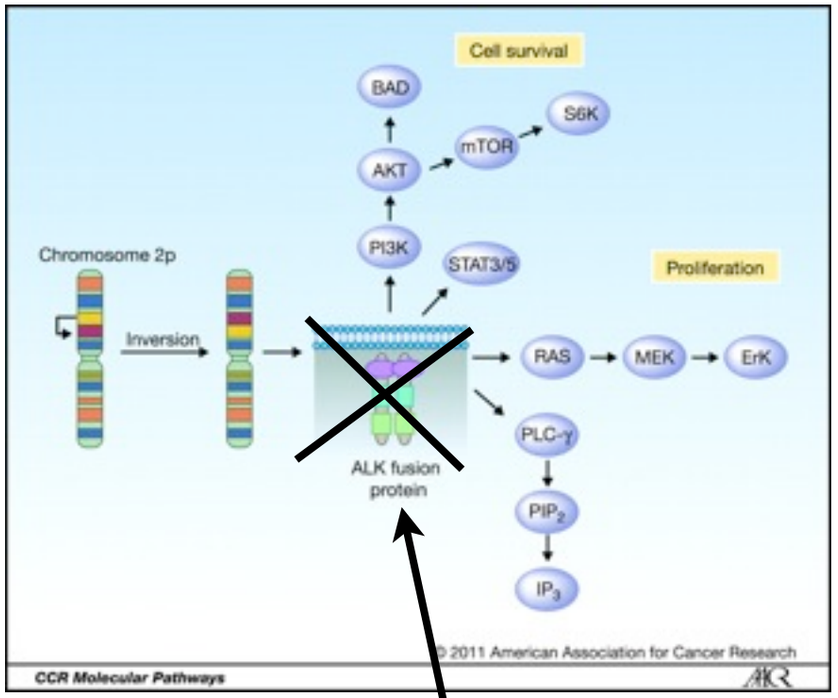
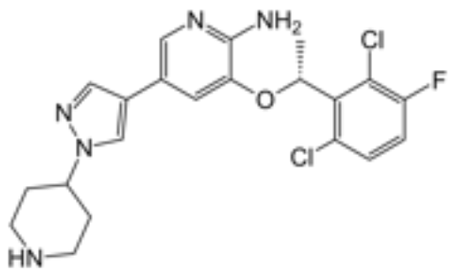




Hvis muteret



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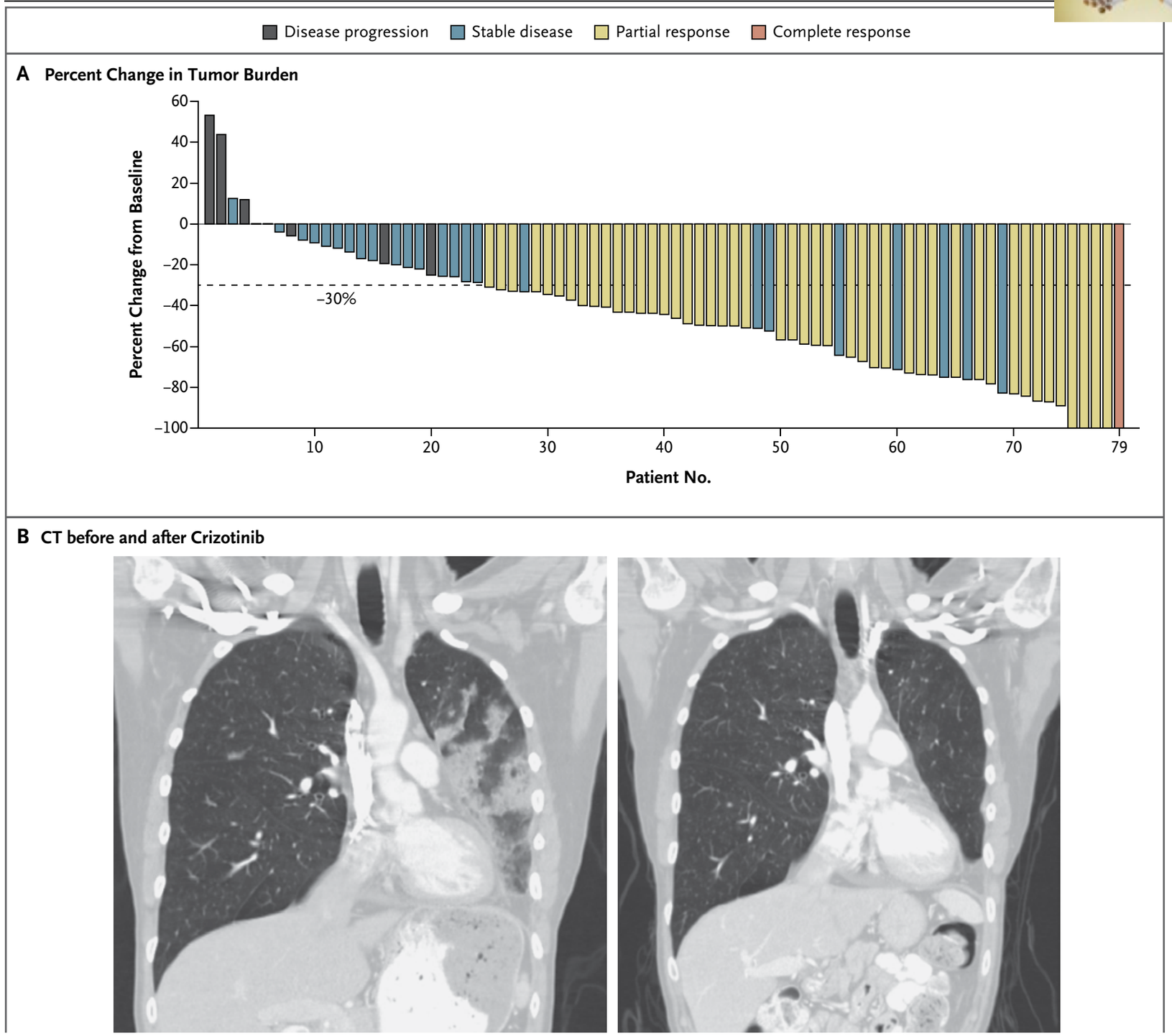

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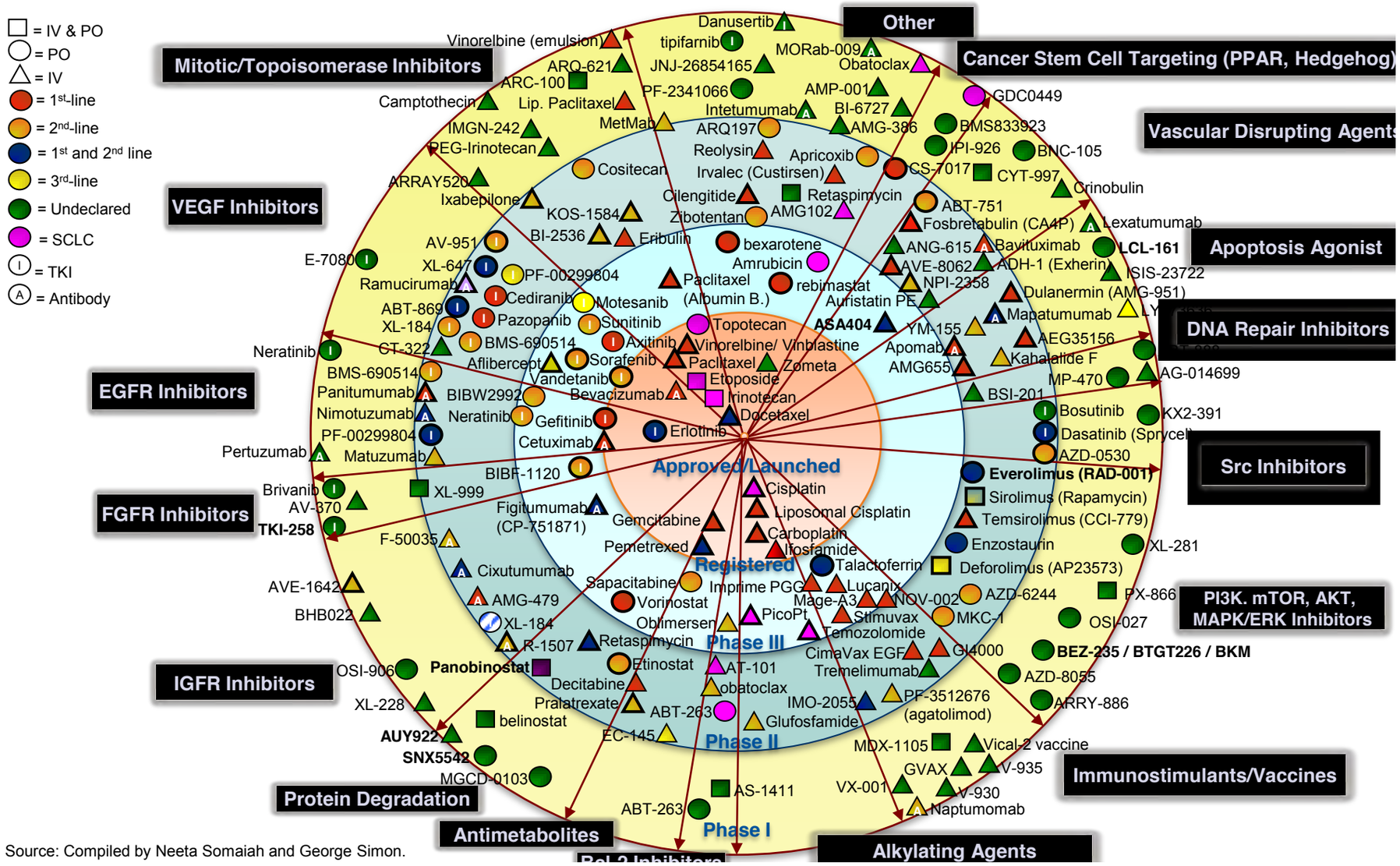
Lung cancer research landscape – MoA group and phase



Source: Compiled by Neeta Somaiah and George Simon.

Fremtid

The end