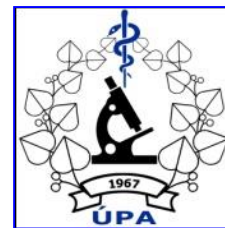
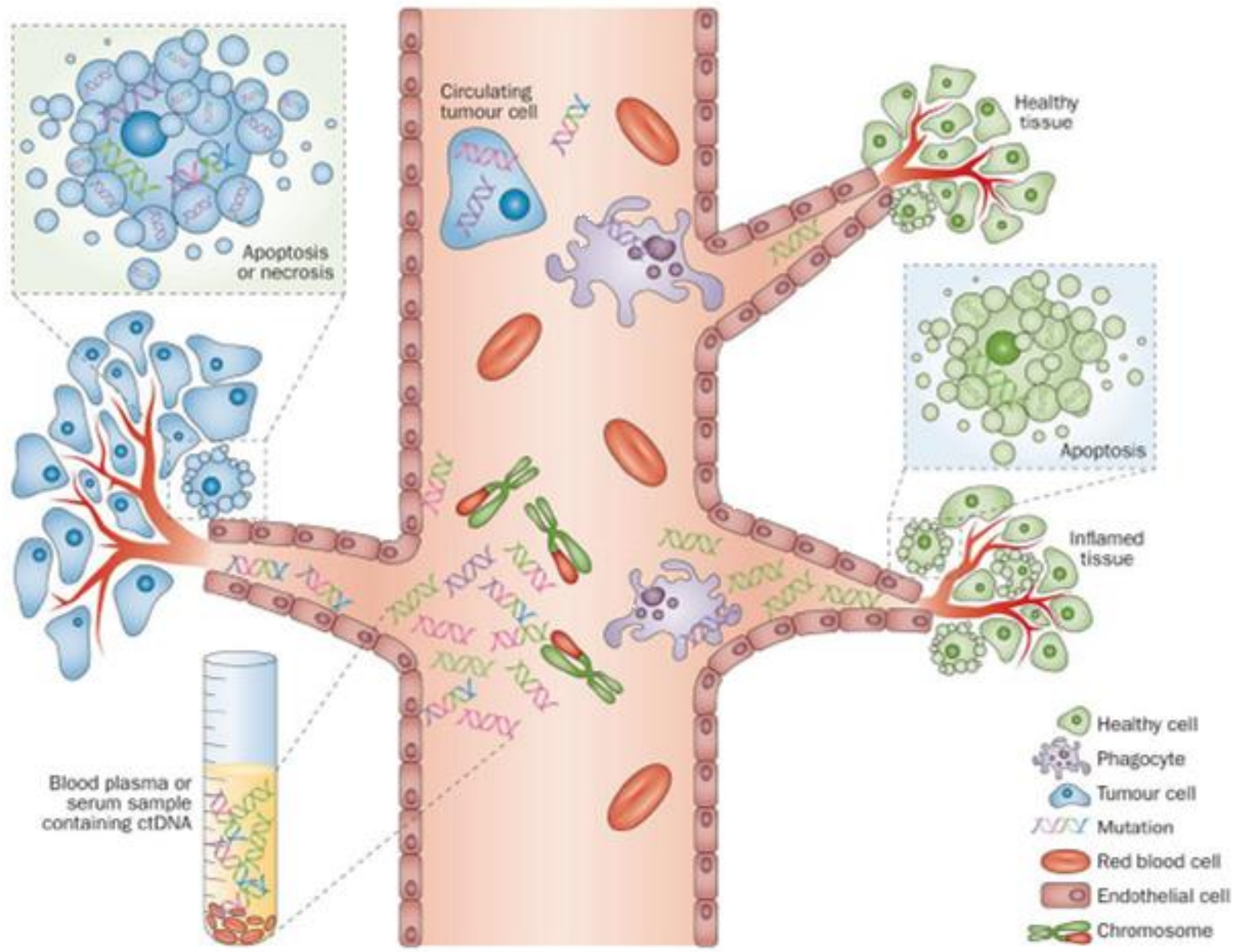


Detection of *EGFR* mutations in ctDNA in plasma samples of NSCLC patients by two simultaneously applied methods

Farkasova Anna, Scheerova Karla, Plank Lukas



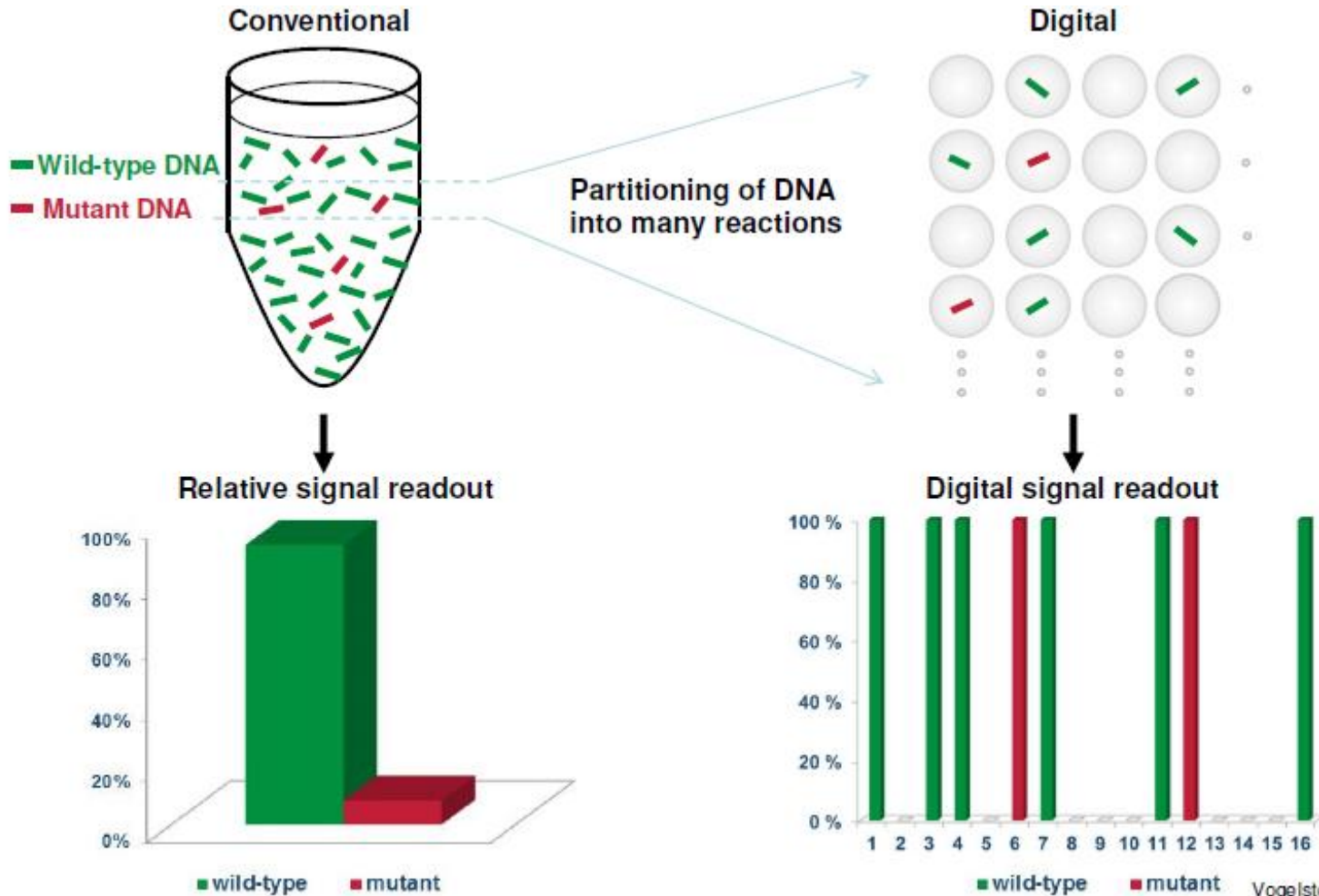




- ✓ CE-IVD
- ✓ 42 mutations in exon 18,19, 20 and 21
- ✓ less than 4 hours from receiving of sample until the result
- ✓ mutations can be detected with sensitivity ≤ 100 copies of mutated DNA in 1 mL of plasma
- ✓ using of K2EDTA tubes

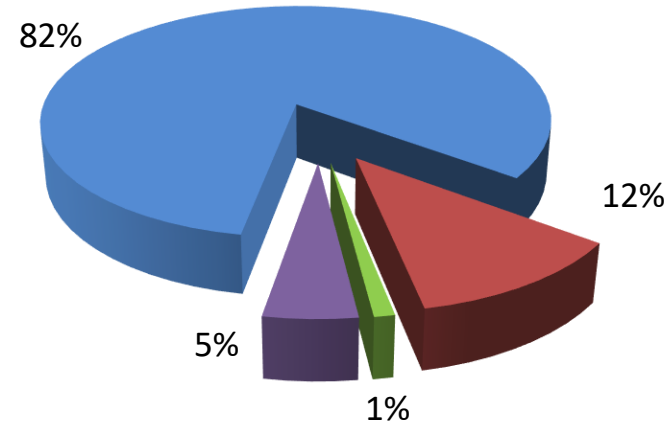


- ✓ RUO
- ✓ 36 mutations in exon 18,19, 20 and 21 (also C797S)
- ✓ sensitivity 0,01 %
- ✓ cell-free DNA BCT
- ✓ „handling-time“ appr. 72 hours

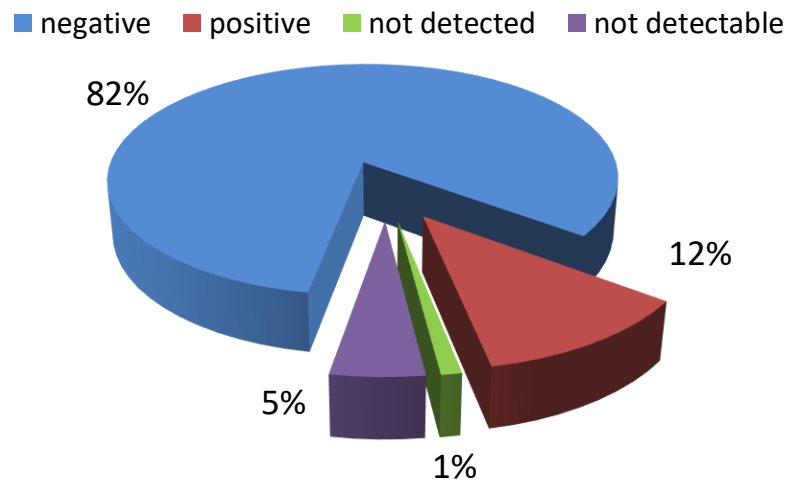


Analysis of *EGFR* gene in tissue samples (n = 3093)

■ negative ■ positive ■ not detected ■ not detectable



Analysis of *EGFR* gene in tissue samples (n = 3093)



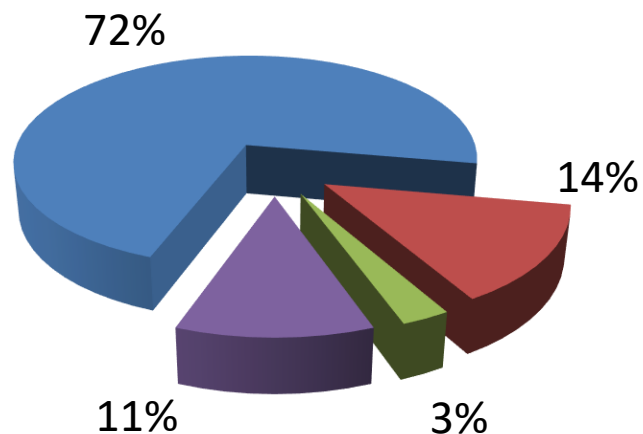
Main reason for „not detected“ was fragmentation of DNA.

Main reason for „not detectable“ was lack of tumour cells or DNA.

„De novo“		
Results	Cobas	Beaming
negative	26	25
exon 19 del	5	5
exon 19 del + T790M	1	2
exon 21 (L858R)	4	4
Sum	36	36

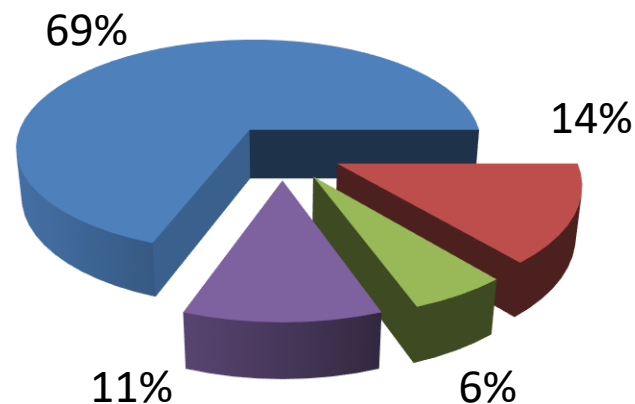
"De novo" by Cobas (n = 36)

■ negative ■ exon 19 del ■ exon 19 del + T790M ■ exon 21 (L858R)



"De novo" by Beaming (n = 36)

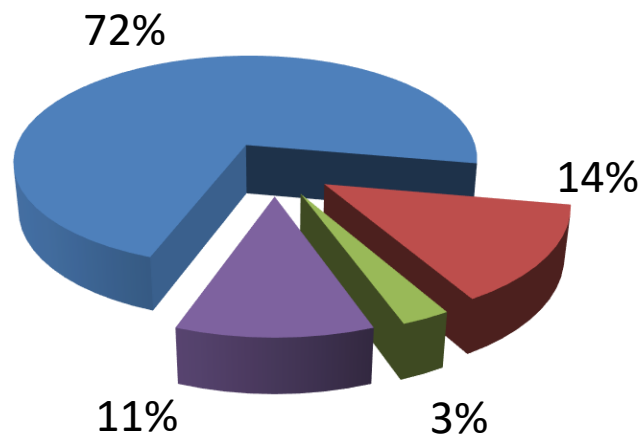
■ negative ■ exon 19 del ■ exon 19 del + T790M ■ exon 21 (L858R)



„De novo“		
Results	Cobas	Beaming
negative	26	25
exon 19 del	5	5
exon 19 del + T790M	1	2
exon 21 (L858R)	4	4
Sum	36	36

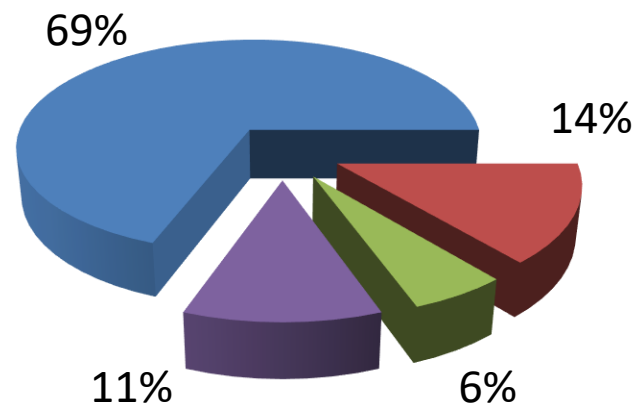
"De novo" by Cobas (n = 36)

■ negative ■ exon 19 del ■ exon 19 del + T790M ■ exon 21 (L858R)



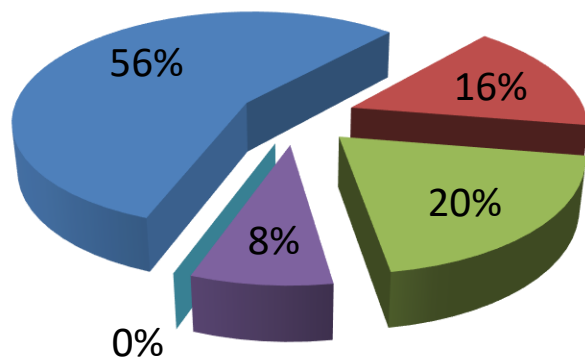
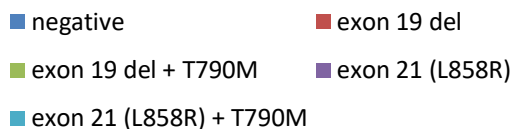
"De novo" by Beaming (n = 36)

■ negative ■ exon 19 del ■ exon 19 del + T790M ■ exon 21 (L858R)

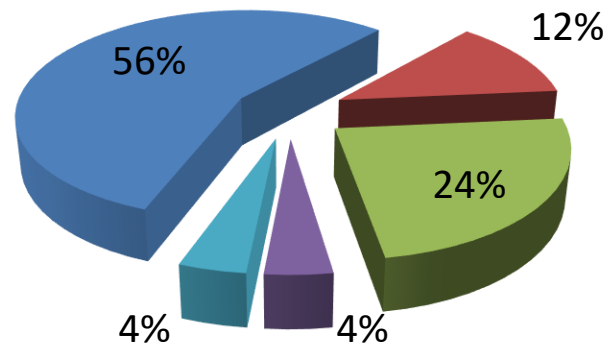
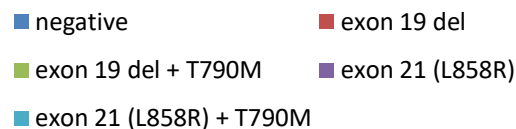


Relaps		
Result	Cobas	Beaming
negative	14	14
exon 19 del	4	3
exon 19 del + T790M	5	6
exon 21 (L858R)	2	1
exon 21 (L858R) + T790M	0	1
Spolu	25	25

"Relaps" by Cobas (n = 25)

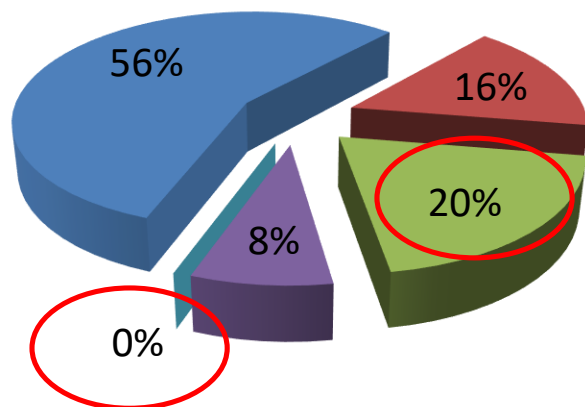
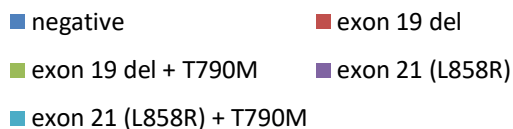


"Relaps" by Cobas (n = 25)

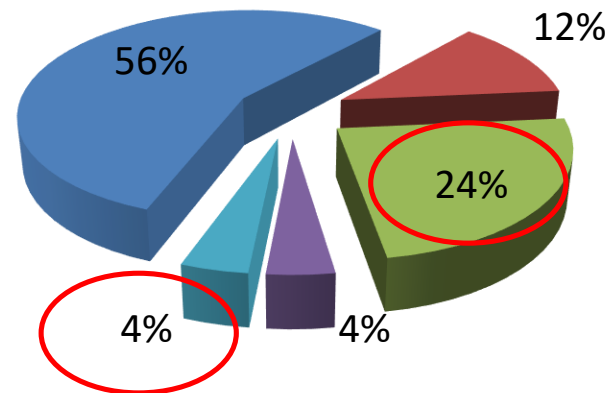
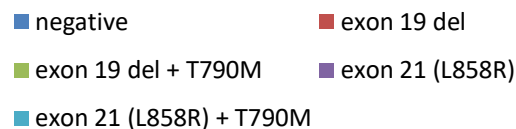


Relaps		
Result	Cobas	Beaming
negative	14	14
exon 19 del	4	3
exon 19 del + T790M	5	6
exon 21 (L858R)	2	1
exon 21 (L858R) + T790M	0	1
Spolu	25	25

"Relaps" by Cobas (n = 25)

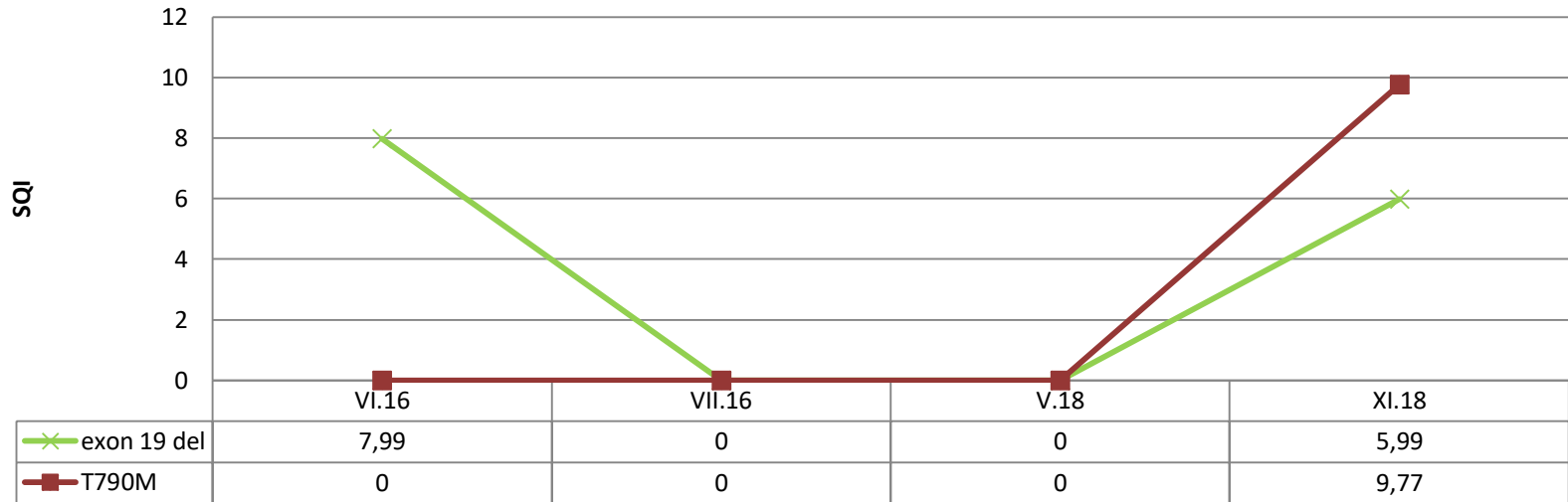


"Relaps" by Cobas (n = 25)



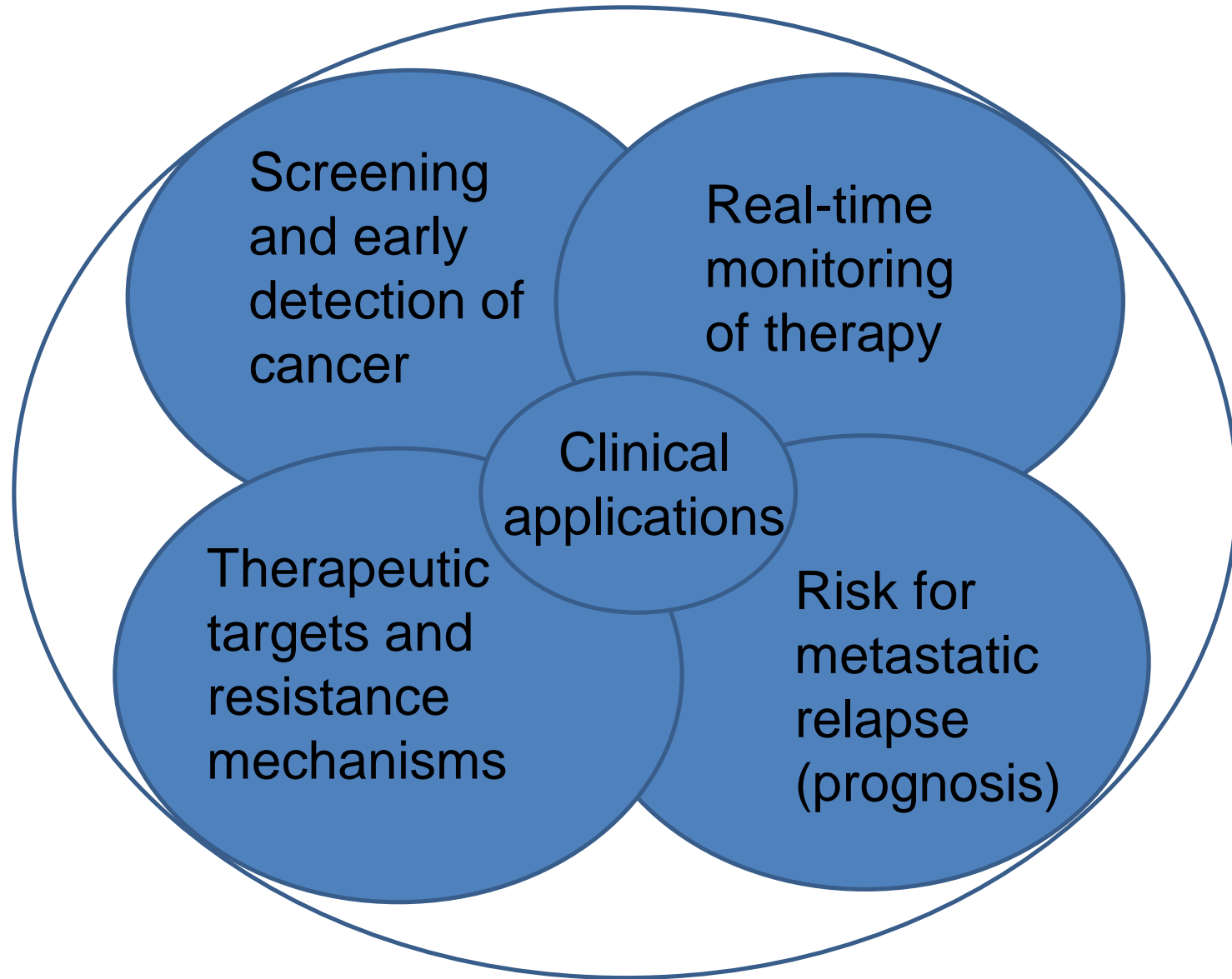
Real-time monitoring of treatment response

Monitoring – patient N° 1



Monitoring - patient N°2





Screening

Real-time

Negative cases should be
re-tested from tissue biopsy to
avoid false negative results.

applications

Therapeutic
targets and
resistance
mechanisms

Risk for
metastatic
relapse
(prognosis)

Screening

Real-time

Negative cases should be **re-tested** from tissue biopsy to avoid false negative results.

applications

Therapeutic

According ESMO and ASCO guidelines is still „**gold standard**“ **testing of tissue biopsy** for target treatment in patients with NSCLC.

Special thanks to:

Doc. Dr. Beržinec (ŠN Sv. SZ NR)
Dr. Benedikty (Onko amb. Prešov)
Dr. Beniak (POKO, Poprad)
Dr. Černá (UNB)
Dr. Daxnerová (FN FDR BB)
Dr. Denková (UNB)
Dr. Doláková (ŠN Sv. SZ NR)
Dr. Ďordayová (UNB)
Dr. Garanová (VOÚ KE)
Dr. Godál (NOÚ)
Dr. Hatalová (FN Trenčín)
Dr. Chowaniecová (ŠN Sv. SZ NR)
Dr. Kasan (UNB)
Dr. Kubischová (FN FDR BB)
Dr. Kulíšková (UNM)
Dr. Kuzmová (ŠN Sv. SZ NR)
Dr. Marták (UNB)
Dr. Mazal (FN FDR BB)
Dr. Mišániová (FN FDR BB)
Dr. Pavlušová (FN FDR BB)
Dr. Polečová (LNsP LM)
Dr. Pribulová (VOÚ KE)
Dr. Riedlová (TN)
Dr. Stratená (FN Trenčín)
Dr. Šteruský (FN FDR BB)
Dr. Šviheľová Lišková (UNB)
Dr. Tatárová (FNsP ZA)
Dr. Urda (FN FDR BB)
Dr. Urdová (FN FDR BB)
Dr. Veselá (UNB)
Dr. Višňovská (VOÚ KE)
Dr. Žák (VOÚ KE)

This work was supported by a donation grant from Boehringer Ingelheim GmbH no. 213346 and AstraZeneca.

Thank you for your attention

