

Update on the certification and recertification process

Sarka Pavlova

Brno, Czech Republic

ERIC Certification activities

AIM: To help laboratories with the adoption of appropriate diagnostic techniques giving reliable and comparable results

1. TP53

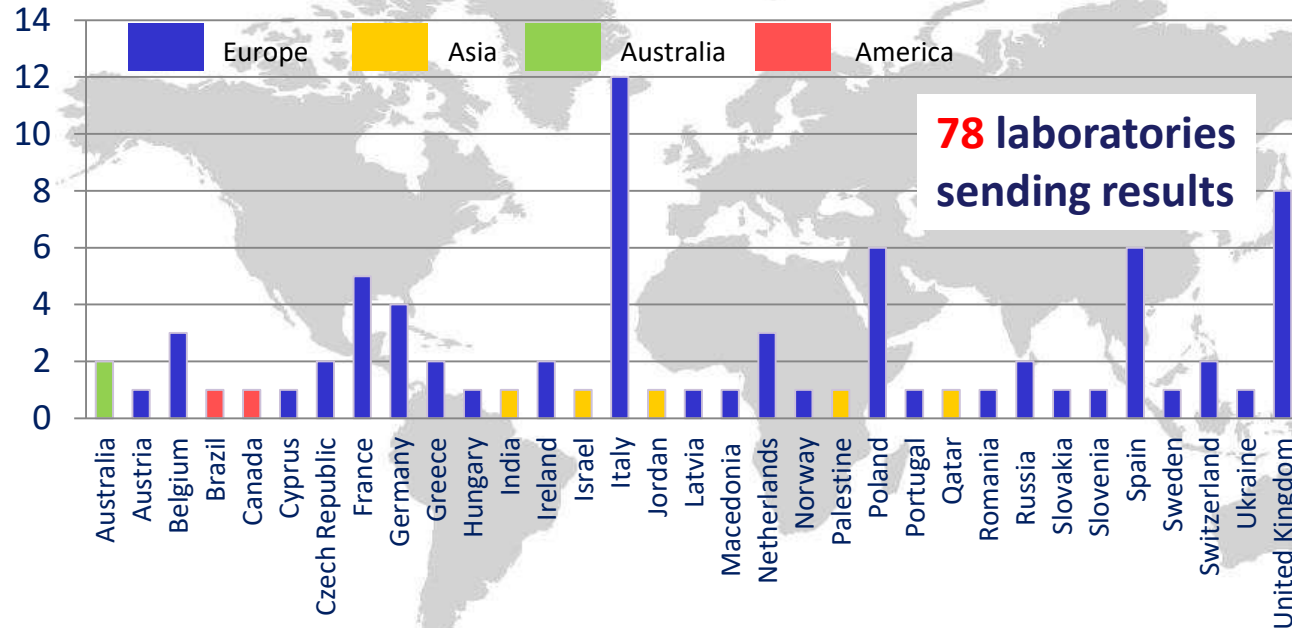
- Round 8 April-September 2019 (78 participants)
- Round 9 started in December 2019 (30 participants)

2. IG

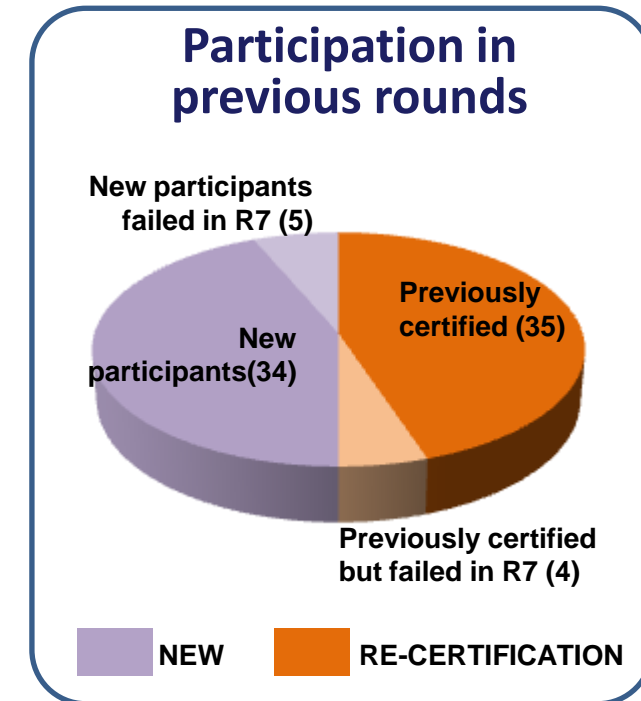
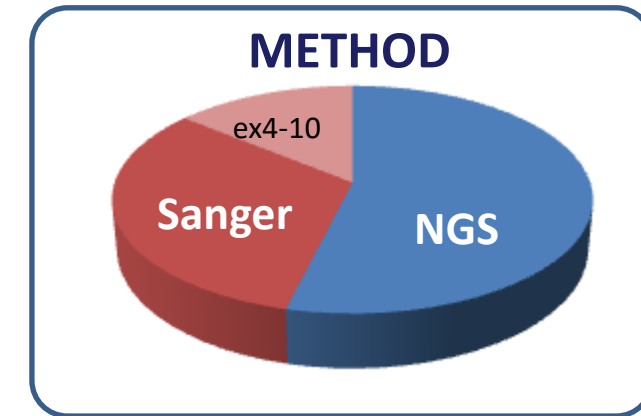
- Round 5 – 32 participants
a lot of provisionally passed laboratories – currently in assessment

ERIC TP53 Certification Round 8

Participating centers per country



- Samples sent to participants: 29/4/2019 and 8/5/2019
- Deadline for results: 2 months (29/6/2019 and 8/7/2019) for Passed
28 days from sample delivery for Passed (GLP)
- Results sent from certification centre to ERIC office: 5/9/2019



ERIC TP53 Certification Round 8: Variants

Sample	TP53 variant	Allelic frequency	Conclusion
1	c.626_627del p.(Arg209Lysfs*6)	100 %	mutated
2	c.743G>A p.(Arg248Gln)	34 %	mutated
	c.509C>T p.(Thr170Met)	1,4 %	
3	c.833C>G p.(Pro278Arg)	68 %	mutated
	c.560-2A>G p.(?)	29 %	
4	c.321C>A p.(Tyr107*)	99 %	mutated
5	No pathogenic variant	-	unmutated

Correct identification of all TP53 variants above declared detection limit:

➤ *5 variants*

➤ *no false positive*



Correct result interpretation:

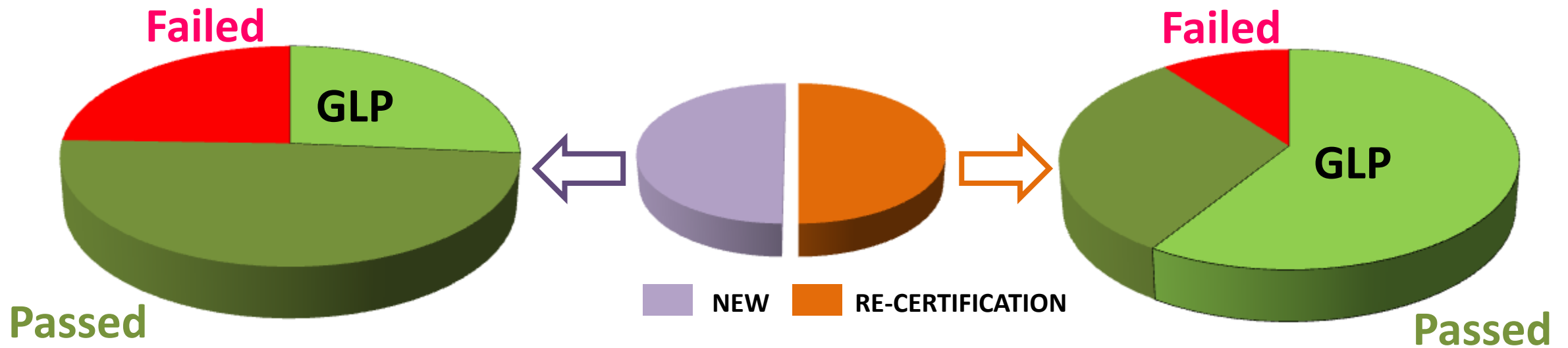
➤ *(likely) pathogenic - not VUS or benign*

Variant allele frequencies represent median values reported by participants.






Common polymorphisms c.215C>G p.(Pro72Arg) present in all samples and c.639A>G p.(Arg213=) present in sample No.5 are not shown.

ERIC TP53 Certification Round 8: Results

- 81 participants, 78 sent the results
- **Passed (GLP): 37**
- **Passed: 24**
- **Failed: 17 (22 %)**



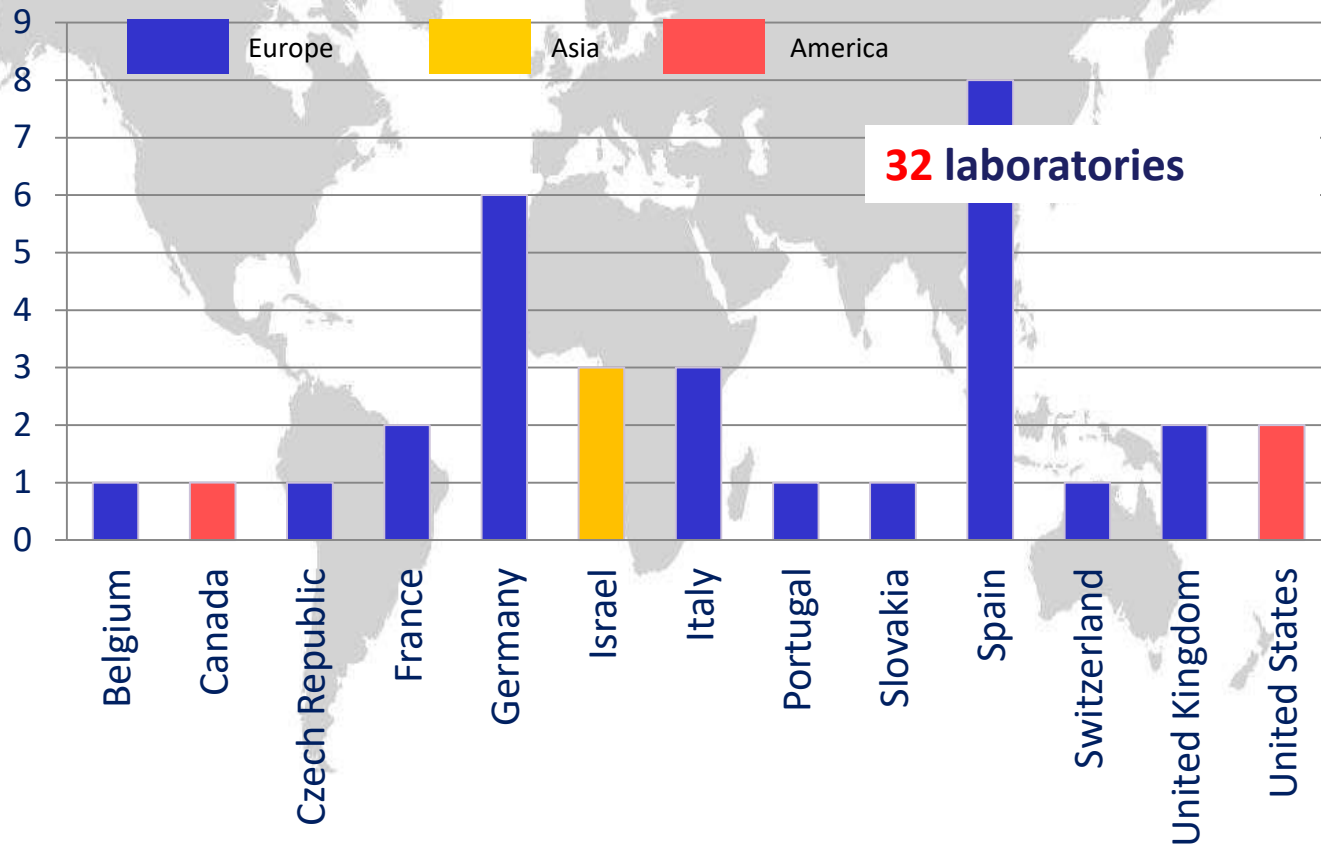
TP53 Round 8: Main mistakes

Mistake		Number of laboratories	Critical error (→Failed)
Splice variant c.560-2A>G p.(?) in sample No.3 not found		11	yes
Another variant not found		4	yes
(Likely) pathogenic variants interpreted as non-pathogenic (VUS or benign)		4	yes
False-positive result(s) reported		4	yes
Incorrect annotation of common polymorphism c.639A>G p.(Arg213=) in sample No.5 leading to its wrong interpretation; correction required but not fixed		1	yes

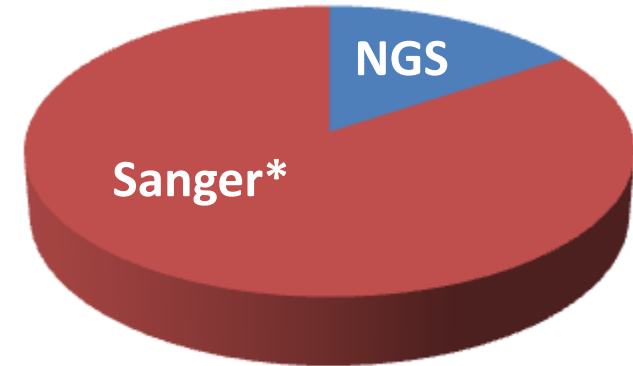
Incorrect variant identification

Incorrect interpretation

Participating centers per country



METHOD



* including 3 labs who perform sequencing only on one strand

➤ IGHV primers for amplification

- Leader only : 10 (31%)
- FR1 only : 3 (9%)
- Both : 19 (59%)

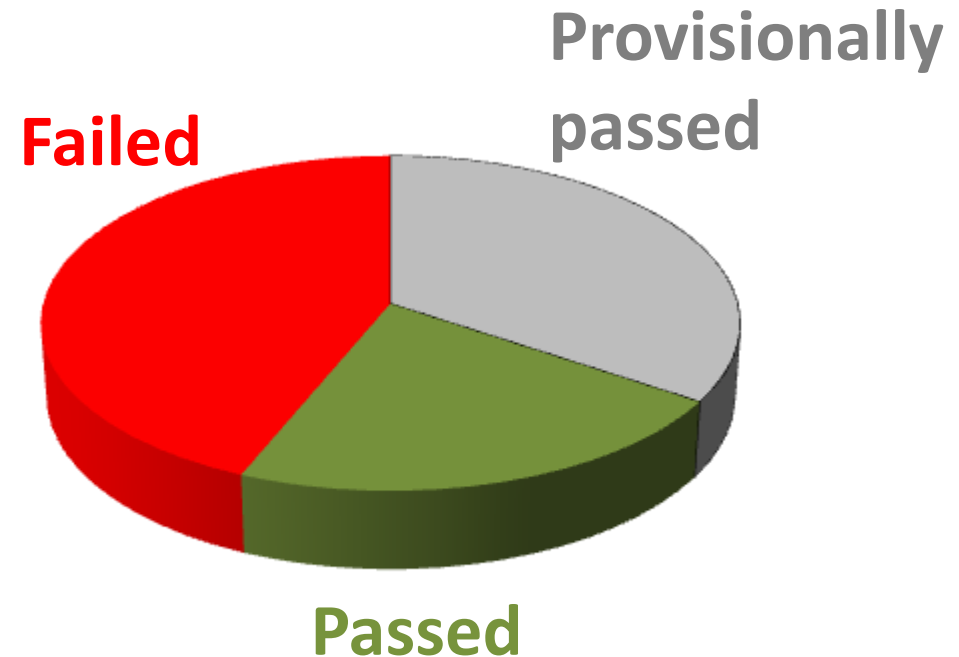
ERIC IG Certification Round 5: Technical aspects

- Bioinformatics - Sanger labs
 - 6 : IMGT/V-QUEST only
 - 12 : IMGT/V-QUEST + ARResT/AssignSubsets
 - 4 : IMGT/V-QUEST + IgBlast
 - 4 : IMGT/V-QUEST + IgBlast + ARResT/AssignSubsets

- Bioinformatics – NGS labs
 - 4 : commercial (+ IMGT/V-QUEST : 3 or IgBlast : 1)
 - 1: IgBLAST and custom bioinformatics

ERIC IG Certification Round 5: Preliminary Results

- 32 participants
- **Failed: 14 (44 %)**
- **Passed : 7 (22%)**
- Provisionally passed: **11 (34%)**



ERIC IG Certification Round 5: Main sources of failure

➤ **Failed laboratories**

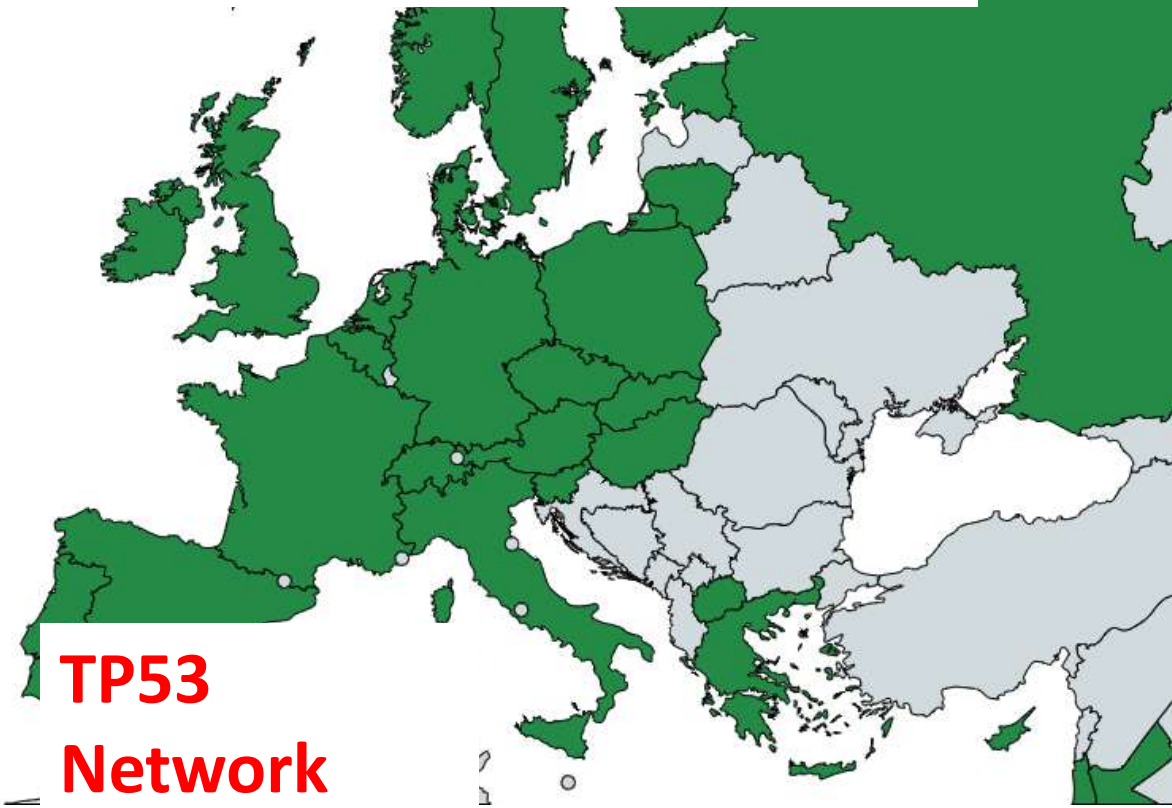
- inability to detect the productive rearrangement
- irrelevant sequences

➤ **Provisionally passed**

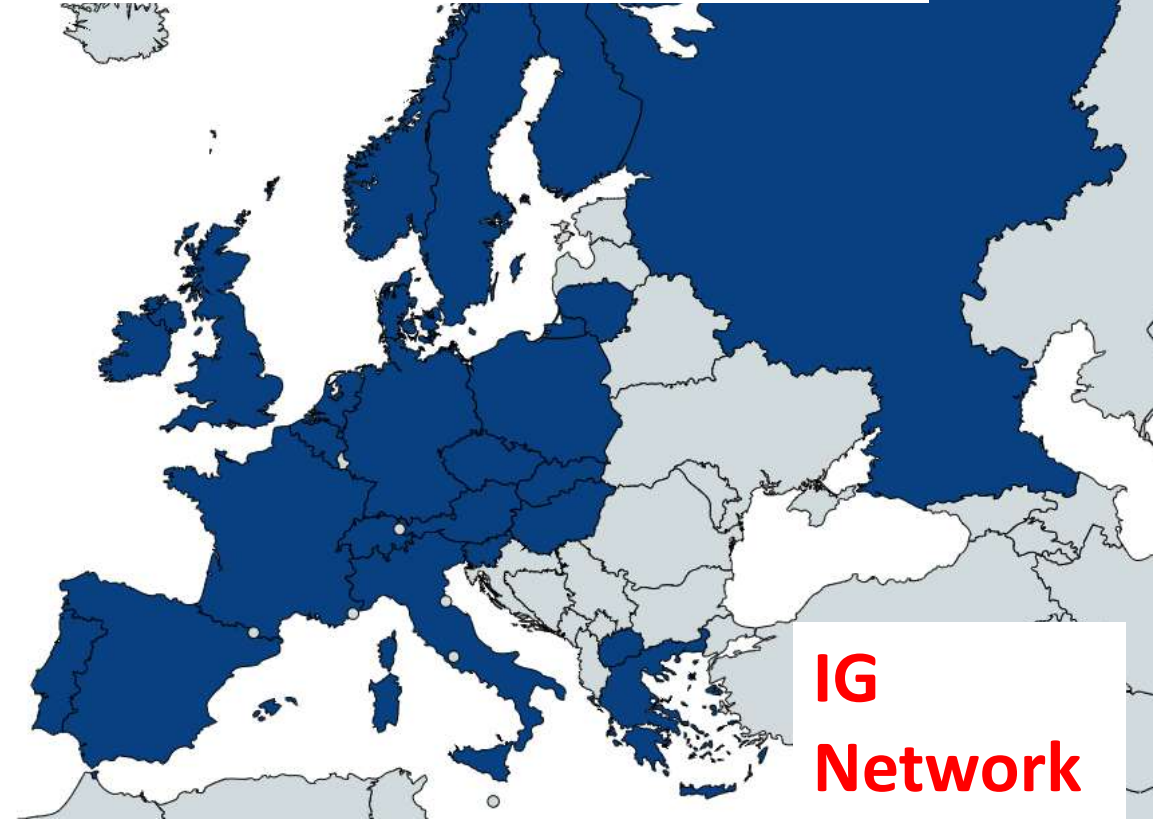
- use of FR1 primers



- The countries in green have at least 1 certified centre
- Besides Europe and Middle East, ERIC also has certified centres in Australia, Brazil and India.



- The countries in blue have at least 1 certified centre
- Besides Europe and Middle East, ERIC also has certified centres in Argentina, Australia, Taiwan and USA



Change in the scheme of ERIC certification activities in 2020

1st IG/TP53 Certification



Re-certification



- IGHV and TP53 pilot EQAs organized by GenQA/ UKNEQAS LI in collaboration with ERIC starting soon
- Changes will be announced to all ERIC members once the pilot round is finished
- ERIC will partially cover the costs of first GenQA certifications
- Application for ERIC TP53 and IG certification is open all year round → www.ericll.org/diagnostics/

TP53 certification
Veronika Navrkalová
Jitka Malčíková
Šárka Pospíšilová

IG certification
Kostas Stamatopoulos
Frederic Davi

National reference centers of TP53 and IG Network

ERIC office - Esther Lopez