

HR1/22: Hormonal Receptors

This EQA round was accomplished according to the document *EQA Plan 2022*.

Note for the participants from the abroad

We are using comma as a decimal separator and dates in day.month.year format.

Samples

The samples (TMA) for this round were prepared at the sub-contractor's site. Participants received 2 histological slides made of the TMAs (each TMA consists of 10 samples of the tissue), one to determine the estrogen receptor (ER) and one for progesterone receptor (PgR).

NOTICE

We would like to inform the participants of the HR programme here as well:

- HR glasses (unlike other programs of the pathology) do not return to SEKK.
- This makes it possible to enter the results into the web application Cibule, which is much faster and more convenient than filling in and sending a paper result form.

Thus the participants do not have to send any postal items back to SEKK in the HR programme.

Supervisor's comment

There were 63 participants in this round, 10 of them from Slovakia, and 1 from Poland.

We asked the participants to report a qualitative result (negative / positive) for each sample and to supplement it with a quantitative estimate of the percentage of ER or PgR in the invasive carcinoma.

Each sample on each slide is processed as a separate test in the process of the EQA assessment.

In general, if a participant does not provide a result for the particular sample/test (e.g. sample lost during staining), then we do not process the relevant sample/test at all for that participant - it is not counted in the evaluation and statistics. Therefore, for all tests in the statistics, the total number of results may not be equal to the number of participants - those who have not reported the result are missing.

Qualitative results

The assigned values are determined as the consensus of the participants in this EQA programme. In the case of qualitative results, the consensus is reached if at least 80 % of the participants agree on the result.

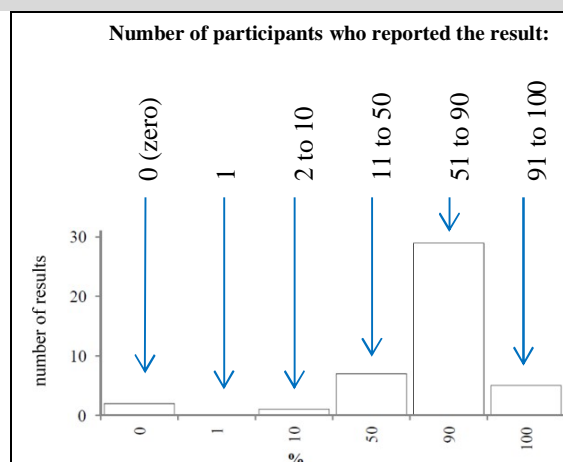
The **ER** staining was completely without problems and consensus was reached in all tests.

In the case of **PgR**, the consensus was reached for all tests **except PgR at position 2** (26 % negative, 74 % positive) and **PgR at position 9** (33 % negative, 67 % positive) - the lack of a consensus was due to the properties of the selected samples in these two positions. These were tumours with low PgR positivity, which, after producing a large number of sections, was manifested as a detection of a different number of positive nuclei in individual sections. In the future, samples with clearer positivity and negativity will be selected to avoid this phenomenon.

Quantitative results

We do not determine AVs for **quantitative** results in this EQA programme. Since these are only estimates with a large uncertainty, consistent determination of the AVs is not possible. Instead of evaluating, we send to the participants the histograms where the summary of all quantitative results and their location within the histogram should be found.

The figure on the right shows how the results of the participants are sorted (summarised) in the histograms, i.e. what results are summed in the individual columns.



The assessment of the test always depends on the qualitative results. Quantitative results do not affect the assessment of the test, but are an important guide to the staining sensitivity settings, and therefore histograms should be considered. If the individual position deviates systematically from most participants, this indicates a problem. Unfortunately about 20 % of the participants did not provide quantitative results.

HR1/22: Hormonal Receptors**Notes on the comments that the participants wrote as a free text**

The presence of internal control in the blocks with negative tumours is not always possible in TMA. Given that the participant's result is related to the consensus, we do not consider it absolutely necessary.

In case of defects in some positions of the TMA block occurs, please follow these instructions printed in the *General instructions* that you receive with the samples:

If **3 or more** samples are **missing (or relocated so that their position cannot be identified)** on a glass after staining at your laboratory, you can request by e-mail a spare glass. If only 2 (or less) samples in a block are missing or displaced, this is not the reason for requesting a new glass (missing result for any TMA position is not evaluated as a wrong result).

Cut-offs reported by the participants

Cut-off	Number of the participants	
	Estrogen receptor (ER)	Progesterone receptor (PgR)
1 %	54	54
3 %	1	1
5 %	2	2

According to the recent recommendation of the ASCO/CAP ([Journal of Clinical Oncology, Vol 28, Issue 16 \(June\), 2010: 2784-2795](#)) the **cut-off = 1 %**. The recommendation of the Czech Society of Pathology is identical. It is always true that low ER values are questionable in terms of clinical response to hormonal manipulation; therefore, a quantitative result in percent or as Allred score (as agreed with the clinical oncologist) must also be reported. It cannot be replaced by a cut-off of 5 % or 10 %. In this EQA programme the cut-off is required also if the laboratory does not use it in the routine practice.

Long term success rate

You can find in the following table the overview of the total success of the participants of this round over last 2 years. Individual ranges of success are defined in the column headers (0 % ... no success; 50 % ... success from 1 to 50 %; 75 % ... success from 51 to 75 % etc.). Next 2 lines contain both absolute and relative number of participants that reached the success rate specified in the header.

Success		0 %	50 %	75 %	80 %	85 %	90 %	95 %	99 %	100 %
Count	absolute	0	0	0	0	0	0	4	20	39
	relative	-	-	-	-	-	-	6,3 %	32 %	62 %

Note: You can find your individual success over last 2 years in your result sheet.

The table shows that almost all participants in this round show a long-term success rate of over 95 %.

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Supplements

As a supplement to this report individual participants receive:

Name of the supplement	Remark
Confirmation of attendance	Issued only to those participants that fulfilled the criteria.
Result sheet (qualitative results)	Issued only to those participants that reported qualitative results.
Histograms	Only for the quantitative results.

The supplements are identified with a name, EQA round identification and participant code and are intended for the needs of the participant.

Additional information

The final report, with the exception of the supplements, is public. Further information is freely available to the participants and other professionals at www.sekk.cz, in particular:

- The summary of the results of this round, including this final report.
- The document *EQA Plan* (contains information that applies both to this round and also the EQA in general).
- Explanation of the content of the particular supplements mentioned above.
- Contact to the EQA provider and the EQA coordinator and the list of all supervisors, including contacts.