

Rules for EPT ORGANISERS providing External Proficiency Testing schemes – Version 4. These Rules represent the minimum criteria which must be followed in order to conform to the accreditation procedures of EFI. The implementation date for version 4 being 1st January 2008.

1. EPT sample numbers per calendar year

The EPT Organiser must provide the minimum number of samples for each EPT, as approved by the EFI Executive Committee, after the proposal of the EFI EPT Committee and published in the EFI Newsletter.

Minimum number of samples for EPT per calendar year:

1.1 HLA Serological typing: 10 samples

1.2 HLA DNA Typing (2 / 4 digits):10 samples

1.3 HLA antibody analysis (detection and /or identification) :10 samples

1.4 Crossmatching: 20 tests

EPT Organisers may use the same samples for more than one of the above. Use of additional samples is optional.

2. Test material

2.1 The test materials to be distributed in the scheme(s) should generally be similar in nature to those routinely tested by participating laboratories.

2.2 Any conditions relating to the test material which may affect the integrity of the interlaboratory comparison, such as homogeneity, sampling, stability, possible damage in transit and effects of ambient conditions, should be considered.

2.3 The test results must not be disclosed to participants until after the reporting deadline.

2.4 EPT Coordinators must consider hazards that the test material might pose and take appropriate action to advise any party that might be at risk (test material distributors, participating laboratories etc.) of the potential hazards involved.

2.5 The packaging and method of transport must be adequate to protect the stability and characteristics of the test material.

2.6 The EPT Organiser must comply with national and international regulations applicable to the transport of test material.

3. **Scheme Registration**

3.1 HLA typing schemes must document the HLA loci and typing resolution to be assessed. EPT Organisers should allow laboratories to register for combinations of these.

3.2 For HLA antibody analysis (detection and /or identification) - EPT Organisers should allow laboratories to register for HLA class I only or HLA class I and class II antibody assessment.

3.3 EPT Organisers should design their crossmatching schemes to reflect current accepted clinical testing practice.

4. **Consensus rule**

A 75% consensus for all serological based EPT must be used by EPT organisers if the exercise includes 15 or more participants.

The 75% consensus rule only applies to serologically based EPT schemes. These are serological typing, testing for HLA specific antibodies and crossmatching.

In cases where less than 15 laboratories participate in an EPT scheme, the results of the majority are regarded as correct.

If a consensus cannot be reached then no discrepancies can be reported.

5. **DNA - based EPT**

For all DNA based EPT (2-or 4-digits) the HLA typing accepted by the EPT Organiser is defined as the correct result.

6. **Staff**

6.1 The staff involved in providing the EPT scheme(s) should have or collaborate closely with those holding adequate qualifications and experience in the design, implementation and reporting of EPT schemes.

6.2 The operation of EPT schemes for H&I also requires the guidance of persons with detailed technical knowledge and experience of the H&I test methods and procedures involved.

7. **Prospectus for EPT**

7.1 The EPT Organiser must make available a prospectus or equivalent document (paper/website) to participating laboratories.

7.2 This document must be revised and issued on a yearly basis.

This document typically would include the following information:

- the name and address of the organisation conducting the external proficiency testing scheme(s)
- contact details for the EPT manager and/or Director
- the nature and purpose of the EPT scheme(s) provided
- criteria/requirements for participation in the scheme(s)
- the name of the laboratory(ies) performing (parts of) the scheme (eg. sampling, processing, homogeneity testing, assessing test results)
- the nature of the test materials to be provided
- a description of the manner in which the test items are obtained, processed and transported
- time schedules for the various phases of the proficiency testing
- sample distribution dates
- deadlines for reporting
- outline of data/statistical analysis to be used
- a description of the data or information to be returned to participants
- the basis of EPT scheme performance evaluation
- detailed instructions covering all aspects of the scheme(s) which should be adhered to by the participants
- participants should be advised to test and interpret EPT samples in a manner identical to that for routine testing of clinical samples
- in certain circumstances the EPT Organiser may instruct participants to use a specified method

8. **Contact details**

EPT Organisers must provide participating laboratories with contact names and correspondence addresses of the EPT Manager and/or Director.

9. **Data processing equipment and analysis**

9.1 Whatever equipment is used, it should be adequate to conduct all necessary data entry, statistical analysis and provide timely and valid results.

9.2 Procedures for checking data entry should be implemented and all software should be verified, supported and backed up.

9.3 The storage and security of data files should be controlled.

9.4 The statistical model and data analysis techniques to be used should be documented and careful consideration should be given to the technique(s) employed.

10. **Scoring systems**

EPT Organisers or a Steering Committee acting on their behalf must detail the scoring systems employed for assessing laboratory performance in each of the EPT schemes provided. A prospectus or equivalent document is recommended for this purpose.

11. Disagreements

11.1 There must be a documented procedure for instances of formal disagreement (including discrepancies) between the EPT Organiser or an EPT Steering committee acting on their behalf and a participant laboratory.

11.2 Participants who disagree with their allocated score(s) must be able to appeal in writing to the EPT Organiser or EPT Steering committee to have their score(s) reviewed.

11.3 Where applicable any confirmatory third party testing performed on behalf of the EPT Organiser must be done by an EFI accredited laboratory. Where feasible, EPT Organisers should retain sufficient test material for this purpose.

12. Steering/Advisory Committee

12.1 EPT Organisers must have an EPT Steering/Advisory Committee, the names of which are provided in a prospectus/website.

12.2 This Committee must have at least three members who are external representatives with recognised backgrounds in Histocompatibility and Immunogenetics (H&I) and/or EPT.

12.3 This Committee must meet at least annually to review the conduct and performance of the schemes.

The functions of this advisory Committee may include:

- (i) the development and review of procedures for the planning, execution, analysis, reporting and effectiveness of the EPT scheme(s) provided
- (ii) the identification and evaluation of interlaboratory comparisons organised by other bodies
- (iii) the evaluation of EPT results regarding the performance of participating laboratories
- (iv) providing advice to any accrediting body assessing the technical competence of participating laboratories, both on the results obtained during a EPT scheme and how these results should be used with other aspects of laboratory evaluations
- (v) providing advice to participants apparently experiencing problems
- (vi) resolving any disputes between the EPT Organiser and participants

12.4 The EPT Steering/Advisory Committee should also consider written comments from participants, professional organisations and members of the H&I discipline regarding the nature and operation of the schemes provided.

13. **Annual General Meeting**

EPT Organisers should organise an Annual General Meeting for the end of each calendar year (usually early December). An invitation to attend should be forwarded to each participating laboratory.

14. **Confidentiality and unique laboratory codes**

14.1 For confidentiality purposes EPT Organisers must assign unique codes to the participating laboratories.

14.2 Laboratory code information should only be known to the participating laboratory and EPT Organiser/Manager/Steering Committee.

14.3 The identity of participants should only be known to the minimum number of people involved in coordinating a programme and this should extend to any subsequent remedial advice or action applied to a laboratory exhibiting poor performance.

15. **Data analysis**

15.1 The results received from the participating laboratories should be entered and analysed, then reported back as soon as practicable. It is recommended that data sheets, computer back-up files, printouts, graphs etc. be retained for a specified period.

15.2 Data analysis should generate summary measures and performance statistics and associated information consistent with the scheme's statistical model and the objective of the EPT scheme(s).

16. **EPT scheme/summary reports**

16.1 EPT scheme reports must be clear and comprehensive.

16.2 EPT scheme reports should include data on the distribution of results from all laboratories together with an indication of individual participant's performance.

16.3 EPT Organisers must issue a scheme/summary report within 3 months of the report deadline.

The following should normally be included in these EPT scheme reports:

- (i) name and address of EPT Organiser
- (ii) date report issued
- (iii) report number and clear indication of EPT scheme
- (iv) laboratory participation codes and test results
- (v) statistical data and scoring including assigned values
- (vi) comments on laboratory performance by EPT Organiser/technical advisers

(vii) procedures used to statistically analyse the data and where appropriate interpretation of the data analysis

16.4 Where participants are free to use a method of their own choice, EPT Organisers should, where appropriate, request details of the methods used to allow the use of participants' results to compare and comment on the methods.

16.5 Laboratory code rather than laboratory name information must be detailed in such scheme/summary reports.

16.6 Reporting of performance by ranking laboratories in a table according to their performance is not recommended in proficiency testing.

17. **Annual EPT Performance Certificate**

17.1 The EPT Organiser must issue an annual EPT certificate to participating laboratories summarising the individual laboratory's performance in each of the schemes assessed.

17.2 This document must include the full name of the participating laboratory, the date report issued, the period covered by the EPT, the type of EPT schemes assessed, the total number of samples tested, the scoring and performance as determined by the EPT Organiser.

17.3 This certificate must be provided on the EPT scheme's headed/official/stamped paper and be sent to the participating laboratory by the 31st January of the following year. Several EPTs can be reported on the same document.

18. **Timetable of sample distribution dates**

18.1 The EPT Organiser must provide a timetable of sample distribution dates to participating laboratories at the beginning of each calendar year. A prospectus or equivalent document is recommended for this purpose.

18.2 Any deviations from these dates must also be notified in writing to the participating laboratories.

18.3 Samples should be distributed to ensure that the results can be assessed by the EPT Organiser within the calendar year (i.e. between January and December).

19. **Communication with participants**

19.1 Participants should be provided with a detailed set of information on joining an EPT scheme, such as a prospectus/website/scheme protocol(s). Subsequent communication with participants can be by e mail, letter and /or reports, together with periodic open meetings.

19.2 Participants should be immediately advised, in writing, of any changes in scheme design or operation.

19.3 Feedback from laboratories should be encouraged, so that participants actively contribute to the development of a scheme.

20. **Nomenclature :**

The most recently published full WHO Nomenclature Report should be taken as the 'reference' baseline nomenclature.

21. **HLA Typing schemes:**

For HLA typing schemes EPT Organisers must ensure that the entire typing is correct for a sample to be considered correct. For example, if a laboratory types for HLA-A, B and DRB1 and reports the correct type for HLA-A and HLA-B, but misses one of the DRB1 antigens/alleles and if the DRB1 typing is scored, then the typing is considered incorrect. For example, if the exchange had 5 samples to type, then the laboratory would score 80% if they reported the correct typing for 4 out of 5 samples. The samples are counted – NOT antigens or alleles.

21.1 Serological or DNA typing (2 digits):

Examples of possible discrepancies:

1. A participant reports an additional specificity, e.g. the participant reports HLA-A2, A3; B7, B8; and the consensus is HLA-A2; B7, B8. This is counted as a discrepancy.
2. A participant does not report a specificity, e.g. the participant reports HLA-A2; B7, B8; and the consensus is HLA-A2, A3; B7, B8. This is counted as a discrepancy.
3. A participant reports another specificity, e.g. the participant reports HLA-A2, A23; B7, B8 and the consensus is HLA-A2, A24; B7, B8. This is counted as a discrepancy.

21.2 DNA typing (4 digits):

HLA alleles must be assessed on the basis of differences in exons 2 and 3 for class I and exon 2 for class II, as a minimum requirement.

Examples of possible discrepancies:

1. A participant reports an additional allele, e.g. the participant reports HLA-A*0202, A*0301 and the correct typing is HLA-A*0201. This is counted as a discrepancy.

2. A participant does not report an allele, e.g. the participant reports HLA-A*0201, and the correct typing is HLA-A*0201, A*0301. This is counted as a discrepancy.
3. A participant reports another allele, e.g. the participant reports HLA-A*0201, A*0301 and the correct typing is HLA-A*0201, A*2402. This is counted as a discrepancy.
4. A participant reports a different allele, e.g. the participant reports HLA-A*0102 while the correct typing is HLA-A*0101. This is counted as a discrepancy.

22. **Schemes for Detection of HLA class I and/or class II antibodies**

EPT Organisers must assess class I and class II antibody detection separately.

Examples of possible discrepancies:

1. The participant reports the presence of HLA antibody (ies) (class I and/or II) where the consensus is negative.
2. The participant reports the absence of HLA antibody (ies) where the consensus is positive.

23. **Schemes for Identification of HLA class I and/or class II antibodies**

23.1 EPT organisers must assess Class I and Class II antibody identification separately.

23.2 EPT Organisers should apply a penalty scoring system for discrepancies such as those detailed below.

Examples of possible discrepancies:

1. The participant reports an HLA antibody specificity corresponding to an HLA antigen expressed by the serum donor.
2. The participant reports a specificity for a consensus HLA antibody negative serum.
3. The participant fails to report a specificity defined to be the consensus.

24. **Crossmatching schemes:**

Examples of possible discrepancies:

1. The participant reports a positive crossmatch where the consensus is negative.
2. The participant reports a negative crossmatch where the consensus is positive.

25. **Successful performance on External Proficiency Testing.**

Successful performance, as determined by the EPT Organiser, applies to the annual EPT performance of the laboratory within a calendar year. For example, a laboratory is unsuccessful for HLA typing if the laboratory's overall score is <90% for the year.

The maximum number of discrepancies allowed in a calendar year (set by the EFI EPT Committee) is to be used to determine the acceptable laboratory EPT performance levels:

25.1 Serological typing:

1 single HLA type discrepancy per 10 samples tested or 10% of the total number of samples tested.

25.2 DNA typing 2 digits:

1 single HLA type discrepancy per 10 samples tested or 10% of the total number of samples tested.

25.3 DNA typing 4 digits:

1 single HLA type discrepancy per 10 samples tested or 10% of the total number of samples tested.

25.4 HLA Antibody Detection:

2 discrepant results per 10 samples tested or 20% of the total number of samples tested.

25.5 Crossmatching:

3 discrepant results per 20 tests or 15% of the total number of tests.