



## **Recognition certificate Medical Genetic Laboratory Supervisor/Expert**

### **1) Aim of the certificate**

The certificates of Genetic Laboratory Supervisor and Genetic Laboratory Expert are issued by the Belgian Society of Human Genetics (BeSHG). The BeSHG grants these certificates to people who have fulfilled the necessary criteria, which are listed below. Holders of the certificate have demonstrated their theoretical and practical skills in the field of human genetic diagnostics and have proven to have the necessary skills and experience to fulfill a supervising position in a genetic diagnostic lab.

### **2) Procedure to obtain the certificate**

The certificate of Genetic Laboratory Supervisor or Genetic Laboratory Expert is issued by the BeSHG. Every application is being reviewed by the BeSHG Recognition Committee (RC), which is a working group of the BeSHG. The RC reviews the procedure and criteria for recognition at least every two years and updates if necessary. The Recognition committee is composed of 6 members, 2 experts in the field of cytogenetics, 2 experts in the field of molecular genetics and 2 experts in the field of onco-hematology genetics. In case of more candidates than available positions for a specific field, the following BeSHG work group representing these fields delegates 2 members after voting:

- 1) BeSHG workgroup on constitutional post- and prenatal (molecular) cytogenetics (BelCoCyt)
- 2) Belgian cytogenetic group in hematology and oncology (BCG-HO)
- 3) Belgian workgroup on molecular genetics (BELMOLGEN)

Members of the RC are elected for a period of 5 years and can be re-elected. Election is held within each working group with blind voting and simple majority. In case members retire before their full period of 5 years, he/she is replaced by an expert of the same field.

The RC evaluates all applications and takes final decision whether to give the recognition or not. A final decision is made within 3 months after the application is received.

All members of the recognition working group provide their advice on every application. No-consensus cases need to be discussed. For final decision a simple majority vote is necessary.

The RC can ask additional information to the applicant if this is considered required for the evaluation.



RC members cannot vote on applications of their own genetic center or applications where they act as promotor.

Members of the recognition committee are bound by confidentiality.

In case of disagreement with the final decision of the recognition committee, the applicant can address an appeal to the BeSHG board. The board will investigate the appeal and can ask the recognition committee to re-evaluate the application on motivated grounds.

### **3) Validity of the certificate**

A certificate is valid for a period of 5 years after which it can be repeatedly prolonged for another 5 years if the necessary criteria listed in the section “Certificate extension” are fulfilled.

### **4) Certificate types**

There are two types of BeSHG Medical Genetic Laboratory certificates:

- 1) BeSHG Medical Genetic Laboratory Supervisor: is responsible for interpretation and technical validation of genetic test results and daily organization/management of a genetic laboratory or section of the latter
- 2) BeSHG Medical Genetic Laboratory Expert: is responsible for interpretation and technical validation of genetic test results

#### **4.1) BeSHG Medical Genetic Laboratory Supervisor**

##### **4.1.1) Application criteria**

To apply for a Medical Genetic Laboratory supervisor certificate the applicant must have a scientific PhD degree.

Each applicant must have a promotor who is responsible for supervision of the training program. The promotor must be a certified Medical Genetic Laboratory Supervisor.

The promotor should be working in the same (genetic) center as the applicant. If this is not the case, this should be motivated and efficient supervision by the promotor should be documented.



The below mentioned training program for Genetic Laboratory supervisor certification should be completed under the supervision of the promotor in one of the eight recognized genetic centers in Belgium.

#### 4.1.2) Organization of the Genetic Laboratory Supervisor recognition program

The recognition of medical genetics laboratory supervisor can be obtained after completion of a training program which includes extended knowledge and handling of molecular genetic and cytogenetic testing. The duration of the training should be at least the equivalent of 4 years at a 0.8 FTE working regime.

##### Theoretical requirements:

The applicant must demonstrate his theoretical knowledge in the field of human genetics and supervising tasks. General theoretical requirements include the following:

- The applicant must follow and pass the exam of the BeSHG course in Human genetics.
- The applicant must demonstrate his knowledge in the field of quality control and quality management by certification of quality control workshops and/or declaration of the quality manager of his training institute.
- The applicant must demonstrate his/her involvement in operational lab management (specify number of technicians/genetic tests under his/her supervision,...)

##### Practical Requirements

The applicant should demonstrate his practical experience and knowledge in the various fields of genetics. For each subdiscipline/technique of genetics, major and minor requirements are defined and each applicant should fulfill all major requirements for at least 1 subdiscipline/technique and all the minor requirements for all the other subdisciplines/techniques listed.

The requirements are summarized in table 1 in the addendum. For each technique both active and passive training includes all steps of the full protocols.

Previous relevant experience obtained during PhD program or work experience may be included.

It is the applicant's responsibility to provide documentation proving he/she met all the theoretical and practical requirements.



#### 4.2) BeSHG Medical Genetic Laboratory Expert

To apply for a Medical Genetic Laboratory Expert certificate the applicant must have at least a scientific master degree.

Each applicant must have a promotor who is responsible for supervision of the training program. The promotor must be a certified BeSHG Medical Genetic Laboratory Supervisor.

The promotor should be working in the same (genetic) center as the applicant. If this is not the case, this should be motivated and efficient supervision by the promotor should be documented.

The below mentioned training program for Medical Genetic Laboratory Expert certification should be completed under the supervision of the promotor in one of the eight recognized genetic centers in Belgium.

The recognition of Medical Genetic Laboratory Expert can be obtained after completion of a training program which includes extended knowledge and handling of molecular genetic and cytogenetic testing. The duration of the training should be at least the equivalent of 4 years at a 0.8 FTE working regime.

##### Theoretical requirements:

The applicant must demonstrate his theoretical knowledge in the field of human genetics. General theoretical requirements include the following:

- The applicant must follow and pass the exam of the BeSHG course in Human genetics.
- The applicant must demonstrate his knowledge in the field of quality control and quality management by certification of quality control workshops and/or declaration of the quality manager of his training institute.

##### Practical Requirements

The applicants should demonstrate their practical experience and knowledge in the various fields of genetics. Therefore the applicant should fulfill all major requirements for at least 1 subdiscipline/technique summarized in table 1 (see addendum).

It is the applicant's responsibility to provide documentation proving he/she met all the theoretical and practical requirements.

##### Retrospective recognition

A retrospective recognition of Medical Genetic Laboratory Expert can be obtained for people who fulfill the following criteria on 01/01/2022.



- Working at least for 4 years in position of Medical genetic Laboratory Expert in a Belgian genetic center
- Fulfill all other requirements with exception of following the BeSHG course (including passing the exam). The latter is not required but recommended.

Applications for retrospective recognition should be received before 30/06/2022

### **1) Permanent education/prolongation of the recognition**

Certified medical genetics laboratory supervisors and experts need permanent education in order to function in the fast evolving field of medical genetics. At the end of the validity of the recognition certificate, 5 years after issuing date, the validity can be prolonged if the following minimal education criteria are fulfilled.

- At least 35 hours of ongoing education in the last 2 years preceding the renewal application
- At least 20 hours should be external (outside the laboratory)

The subject of the permanent education must be relevant to the certification.

The permanent education must be documented and all activities must be listed in excel format, sorted by activity type for each year. A template of the submission file can be found on the BeSHG website. The file must be sent by mail to the chair of the RC at least 3 months before end of validity of the certificate.



## Addendum

Table1: Subdiscipline/technique requirements

Subdiscipline/technique	Major requirement			Minor requirement
	Follow	Perform	interpretation	Follow
<b>Standard molecular genetics</b>				
PCR	x	x	x	x
STR analysis	x		x	x
Sanger sequencing	x		1000 (including point mutation/deletion/insertion/mosaic)	x
Variant interpretation			100	x
RNA and DNA extraction	x		X (yield, quality)	x
deletion/duplication (MLPA/ Southern blot/qPCR)	x		150 (50 with deletion/duplication)	x
<b>Micro-array</b>				
SNP and/or array CGH			Constitutional: 500 (100 with deletion/duplication ) OR Onco-hemato: 100 (50 abnormal)	
- laboratory steps	x	10		
- data analysis	x	10		x
<b>Conventional cytogenetics</b>	x			
Cell culture	x			x
Banding	x			x
Karyotyping	x		Constitutional: 1000 OR Onco-hemato: 300	x
FISH	x		200 (50 abnormal)	x
<b>Next Generation sequencing</b>				
Library enrichment	x			x
Sequencing	x		1000	x
Low pass sequencing	x		100 (50 abnormal)	x

(OH for onco-hemato)



### **Version History**

<b>Version</b>	<b>Date</b>	<b>Change</b>
1	31/1/2012	Initial version
2	7/12/2012	Retrospective recognition section removed
3	19/06/2016	Retrospective recognition section added
4	15/11/2018	Recognition committee requirements adapted Theoretical and practical requirements for certification adapted Permanent education reporting format specified
5	24/08/2021	Medical Genetic Laboratory Expert certificate added Retrospective recognition for Genetic Laboratory Supervisor removed Renewal criteria reviewed