# Test Order

Please fill out electronically. If handwritten, write neatly in block letters

CENTOGENE
THE RARE DISEASE COMPANY

Patient's Initials ____ Date of Birth ____ / ____ / ____ (DD/MM/YYYY)

FOR CENTOGENE USE ONLY
– DO NOT COVER –

MATERIAL REQUIREMENTS
Please check material requirements at
www.centogene.com/diagnostics/how-to-order

## Additional Services (optional)

☐ FAST processing[1] ☐ Prenatal processing[2] ☐ Maternal Cell Contamination

## Whole Genome Sequencing and Whole Exome Sequencing

| | | | | | |
|---|---|---|---|---|---|
| **CentoGenome®** (WGS) | ☐ Standard (incl. medical report) | ☐ Variant (raw data only) | ☐ MOx | ☐ Prenatal[3] | |
| **CentoXome®** (WES) | ☐ Standard (incl. medical report) | ☐ Variant (raw data only) | ☐ MOx | ☐ Prenatal[3] | |
| **Number of patients** | ☐ Solo (index) | ☐ Duo (index+1) | ☐ Trio (index+2) | ☐ PLUS (additional family member(s) beyond Trio) | |
| **Additional test options** (CMA) | ☐ CentoArray® (index) | | | | |
| **Medical reporting options**[3] | ☐ Research findings | ☐ Filtered variant file (raw data) | ☐ FASTQ (raw data) | ☐ BAM (raw data) | ☐ VCF (raw data) |

## NGS Panel

**Panel name** C E N T O N E U R O

For selective panels additional analyses are included. For more information please order via **CentoPortal®**

## Multiomic and Biochemical Testing

| | | | | | |
|---|---|---|---|---|---|
| **Multiomics** | ☐ CentoMetabolic MOx | ☐ CentoLSD MOx | ☐ CentoMPS MOx | ☐ CentoNCL MOx | ☐ CentoSphingo MOx |
| **Enzyme panels** | ☐ CentoLSD | ☐ CentoMPS | ☐ CentoNCL | ☐ CentoSphingo | |
| **Biomarkers** | ☐ AADC deficiency | ☐ Fabry disease | ☐ Gaucher disease | ☐ Hereditary angioedema | ☐ Niemann-Pick disease |

## Single Gene Testing

**Gene name** ____

☐ NGS based (CNV included) ☐ Sanger ☐ Del/Dup (MLPA) ☐ Repeat Expansion ☐ Biochemistry (enzymes/biomarkers)

## Carrier Testing

**CentoScreen®** ☐ Solo ☐ Duo ☐ Paired Pack Index Patient ☐ Male ☐ Female

**Targeted analysis**[4] ☐ Point Mutation ☐ Del/Dup ☐ Repeat Expansion

CENTOGENE Index Patient ID ____

**Gene name** ____

**c.** ____

**p.** ____

**transcript** ____

Relative with mutation[6] ____

**Gene name** ____

**c.** ____

**p.** ____

**transcript** ____

## Genome Wide Structural Variant Testing

**CentoArray®** (CMA) ☐ Postnatal ☐ Prenatal[2]

**CentoLCV** (sWGS) ☐ Postnatal

## Material Info

**Sample type** ____

**If tissue sample** Tumor grading stage ____ Tumor cell percentage ____ Origin of tissue ____

**If FFPE tissue** Year of tissue fixation ____ Type of fixation ____

[1] Extra fee per sample – Reduced TAT for CentoXome and CentoGenome to 15 days, CentoICU and Sanger to 10 days, NGS single genes to 20 days
[2] Before sending any prenatal sample please contact customer.support@centogene.com
[3] Prenatal processing and maternal cell contamination fees automatically included
[4] Available only for Standard, MOx, and Prenatal Testing
[5] For individuals not related to cases performed in CENTOGENE please consult customer support for availability
[6] Family member with mutation, e.g., son

Patient's Initials ⌊ ⌋ Date of Birth ⌊ ⌋⌊ ⌋ / ⌊ ⌋⌊ ⌋ / ⌊ ⌋⌊ ⌋⌊ ⌋⌊ ⌋
(DD/MM/YYYY)

## Clinical Patient Information

☐ Unaffected ☐ Affected Age of onset Years ⌊ ⌋ Months ⌊ ⌋

## Clinical Symptoms

Please tick the appropriate boxes ☐

Additional information can be written on the following page.
Complete this form faster and more easily on **CentoPortal®**

### BLOOD
- ☐ Abn.[1] of coagulation
- ☐ Abn.[1] bleeding
- ☐ Anemia
- ☐ Hemolytic anemia
- ☐ Leukocytosis
- ☐ Leukopenia
- ☐ Neutropenia
- ☐ Pancytopenia
- ☐ Thrombocytopenia
- ☐ Thrombocytosis

### CARDIOVASCULAR
- ☐ Abn.[1] blood vessel morphology
- ☐ Abn.[1] heart valve morphology
- ☐ Arrhythmia
- ☐ Atrial septal defect
- ☐ Bradycardia
- ☐ Cardiomyopathy
- ☐ Congestive heart failure
- ☐ Dilated cardiomyopathy
- ☐ Hypertension
- ☐ Hypertrophic cardiomyopathy
- ☐ Left ventricular hypertrophy
- ☐ Myocardial infarction
- ☐ Patent ductus arteriosus
- ☐ Patent foramen ovale
- ☐ Pulmonary arterial hypertension
- ☐ Tachycardia
- ☐ Ventricular septal defect

### CNS MORPHOLOGY
- ☐ Abn.[1] CNS myelination
- ☐ Abn.[1] of cerebral white matter
- ☐ Agenesis of the corpus callosum
- ☐ Brain atrophy
- ☐ Cerebellar atrophy
- ☐ Cerebellar hypoplasia
- ☐ Cerebral ischemia
- ☐ Encephalopathy
- ☐ Hypoplasia of the corpus callosum
- ☐ Leukodystrophy
- ☐ Macrocephaly
- ☐ Microcephaly
- ☐ Stroke
- ☐ Ventriculomegaly

### CNS PHYSIOLOGY
- ☐ Aggressive behavior
- ☐ Attention deficit hyperactivity disorder
- ☐ Autistic behavior
- ☐ Behavioral abnormality
- ☐ Bilateral tonic-clonic seizure
- ☐ Cognitive impairment
- ☐ Delayed speech/language
- ☐ Dementia

### CNS PHYSIOLOGY
- ☐ Developmental regression
- ☐ Dysarthria
- ☐ Dysphagia
- ☐ EEG abnormality
- ☐ Focal-onset seizure
- ☐ Generalized-onset seizure
- ☐ Global developmental delay
- ☐ Hyperactivity
- ☐ Intellectual disability
- ☐ Lethargy
- ☐ Mental deterioration
- ☐ Migraine
- ☐ Motor delay
- ☐ Neurodegeneration
- ☐ Neurological speech impairment
- ☐ Obsessive-compulsive behavior
- ☐ Parkinsonism
- ☐ Seizure
- ☐ Sleep disturbance
- ☐ Stereotypy

### DIGESTIVE SYSTEM
- ☐ Ascites
- ☐ Cholestasis
- ☐ Cirrhosis
- ☐ Constipation
- ☐ Diarrhea
- ☐ Gastroesophageal reflux
- ☐ Hepatic failure
- ☐ Hepatic steatosis
- ☐ Hepatitis
- ☐ Hepatomegaly
- ☐ Hernia of the abdominal wall
- ☐ Jaundice
- ☐ Nausea
- ☐ Pancreatitis
- ☐ Splenomegaly
- ☐ Vomiting

### GROWTH
- ☐ Decreased body weight
- ☐ Failure to thrive
- ☐ Growth delay
- ☐ Intrauterine growth retardation
- ☐ Obesity
- ☐ Overgrowth
- ☐ Premature birth
- ☐ Short stature
- ☐ Tall stature

### HEAD AND FACE
- ☐ Abn.[1] facial shape
- ☐ Abn.[1] of the dentition
- ☐ Brachycephaly
- ☐ Cleft lip
- ☐ Cleft palate
- ☐ Coarse facial features

### HEAD AND FACE
- ☐ Craniosynostosis
- ☐ Depressed nasal bridge
- ☐ Dolichocephaly
- ☐ Epicanthus
- ☐ Frontal bossing
- ☐ High palate
- ☐ Hypertelorism
- ☐ Long philtrum
- ☐ Low-set ears
- ☐ Macroglossia
- ☐ Micrognathia
- ☐ Microphthalmia
- ☐ Midface retrusion
- ☐ Ptosis
- ☐ Retrognathia
- ☐ Short neck

### HEARING
- ☐ Hearing impair.[3]
- ☐ Sensorineural hearing impair.[3]
- ☐ Conductive hearing impair.[3]

### KIDNEY
- ☐ Chronic kidney disease
- ☐ Focal segmental glomerulosclerosis
- ☐ Hydronephrosis
- ☐ Hyperechogenic kidneys
- ☐ Nephrolithiasis
- ☐ Nephrotic syndrome
- ☐ Polycystic kidney dysplasia
- ☐ Renal cyst
- ☐ Renal hypoplasia/aplasia
- ☐ Renal insufficiency
- ☐ Renal tubular dysfunction

### METABOLISM
- ☐ Albuminuria
- ☐ Aminoaciduria
- ☐ Elev.[2] hepatic transaminases
- ☐ Elev.[2] serum creatine kinase
- ☐ Elev.[2] serum creatinine
- ☐ Elev.[2] alkaline phosphatase
- ☐ Hyperammonemia
- ☐ Hyperbilirubinemia
- ☐ Hypercholesterolemia
- ☐ Hyperglycemia
- ☐ Hypertriglyceridemia
- ☐ Hypocalcemia
- ☐ Hypoglycemia
- ☐ Hypokalemia
- ☐ Hyponatremia
- ☐ Hypophosphatemia
- ☐ Lactic acidosis
- ☐ Metabolic acidosis
- ☐ Proteinuria
- ☐ Respiratory alkalosis

### MOVEMENT/MOTOR FUNCTION
- ☐ Areflexia
- ☐ Ataxia
- ☐ Bradykinesia
- ☐ Chorea
- ☐ Dyskinesia
- ☐ Dystonia
- ☐ Frequent falls
- ☐ Gait disturbance
- ☐ Hyperreflexia
- ☐ Hyporeflexia
- ☐ Involuntary movements
- ☐ Peripheral neuropathy
- ☐ Polyneuropathy
- ☐ Positive Romberg sign
- ☐ Spastic paraparesis
- ☐ Spastic paraplegia
- ☐ Spasticity
- ☐ Tremor

### MUSCLE/JOINT
- ☐ Calf muscle pseudohypertrophy
- ☐ Flexion contracture
- ☐ Gowers sign
- ☐ Hip dysplasia
- ☐ Hypertonia
- ☐ Hypotonia
- ☐ Joint hypermobility
- ☐ Joint laxity
- ☐ Lower limb muscle weakness
- ☐ Multiple joint contractures
- ☐ Muscle weakness
- ☐ Muscular dystrophy
- ☐ Myopathy
- ☐ Myotonia
- ☐ Progressive muscle weakness
- ☐ Proximal muscle weakness
- ☐ Rigidity
- ☐ Skeletal muscle atrophy
- ☐ Talipes equinovarus

### RESPIRATORY
- ☐ Apnea
- ☐ Asthma
- ☐ Dyspnea
- ☐ Pulmonary hemorrhage
- ☐ Pulmonary hypoplasia
- ☐ Recurrent respiratory infections
- ☐ Respiratory insufficiency

### SKELETAL
- ☐ Abn.[1] vertebral morphology
- ☐ Abn.[1] of limb bone morphology
- ☐ Abn.[1] of the ribs
- ☐ Arachnodactyly
- ☐ Brachydactyly
- ☐ Clinodactyly
- ☐ Dysostosis multiplex

### SKELETAL
- ☐ Increased bone mineral density
- ☐ Kyphosis
- ☐ Limb undergrowth
- ☐ Pectus carinatum
- ☐ Pectus excavatum
- ☐ Polydactyly
- ☐ Recurrent fractures
- ☐ Reduced bone mineral density
- ☐ Scoliosis
- ☐ Skeletal dysplasia
- ☐ Spondylolysis

### SKIN/NAILS/HAIR
- ☐ Abn.[1] hair morphology
- ☐ Abn.[1] of skin morphology
- ☐ Angiokeratoma
- ☐ Anhidrosis
- ☐ Cafe-au-lait spot
- ☐ Hirsutism
- ☐ Hyperextensible skin
- ☐ Hyperpigmentation of the skin
- ☐ Hypertrichosis
- ☐ Hypohidrosis
- ☐ Hypopigmentation of the skin
- ☐ Ichthyosis

### VISION
- ☐ Abn.[1] of eye movement
- ☐ Abn.[1] cornea morphology
- ☐ Cataract
- ☐ Corneal opacity
- ☐ Glaucoma
- ☐ Nystagmus
- ☐ Ophthalmoplegia
- ☐ Optic atrophy
- ☐ Reduced visual acuity
- ☐ Rod-cone dystrophy
- ☐ Strabismus
- ☐ Visual impairment
- ☐ Visual loss

### VARIOUS
- ☐ Abn.[1] external genitalia
- ☐ Ambiguous genitalia
- ☐ Cryptorchidism
- ☐ Diabetes mellitus
- ☐ Hypospadias
- ☐ Hypothyroidism
- ☐ Immunodeficiency
- ☐ Paresthesia
- ☐ Recurrent fever
- ☐ Recurrent infections
- ☐ Sensory impairment

[1] Abn. = Abnormal / Abnormality
[2] Elev. = Elevated
[3] Impair. = Impairment

Patient's Initials ____ Date of Birth ____ / ____ / ____ (DD/MM/YYYY)

## Please provide any additional phenotypic information

Please avoid abbreviations and include any reference ranges for lab results

☐ Further clinical information attached

## Family History

| | | | |
|---|---|---|---|
| Is there family history of a similar condition? | ☐ Yes | ☐ No | ☐ Unknown |
| Are there affected siblings? | ☐ Yes | ☐ No | ☐ No siblings |
| Is patient in a consanguineous marriage? | ☐ Yes | ☐ No | ☐ Unknown |
| Are patient's parents consanguineous? | ☐ Yes | ☐ No | ☐ Unknown |

## Pedigree

Please provide any relevant family history, in pedigree or written form

**PEDIGREE LEGEND**

- ☐ Male
- ○ Female
- ◇ Sex unknown
- ↗ Index
- ☒ ⊘ Deceased
- ■ ● ◆ Affected individuals
- ☐ ○ ◇ Unaffected individuals

## Family information for additional samples submitted

**Father** ☐ Unaffected ☐ Affected – attach summary of this relative's findings

Last Name ____

First Name ____

Date of Birth ____ / ____ / ____ (DD/MM/YYYY) Sample Collection ____ / ____ / ____ (DD/MM/YYYY)

**Mother** ☐ Unaffected ☐ Affected – attach summary of this relative's findings

Last Name ____

First Name ____

Date of Birth ____ / ____ / ____ (DD/MM/YYYY) Sample Collection ____ / ____ / ____ (DD/MM/YYYY)

**Additional Family Member** ☐ Unaffected ☐ Affected – attach summary of this relative's findings

Last Name ____

First Name ____

Date of Birth ____ / ____ / ____ (DD/MM/YYYY) Sample Collection ____ / ____ / ____ (DD/MM/YYYY)

**Further Additional Family Member** ☐ Further family (members) information attached Total number of family members to be analysed ____

Patient's Initials _____ Date of Birth ___ / ___ / _____ (DD/MM/YYYY)

## Patient Information

Last Name

First Name

Date of Birth ___ / ___ / _____ (DD/MM/YYYY) Genetic Sex ☐ Male ☐ Female

Reference No. Sample Collection ___ / ___ / _____ (DD/MM/YYYY)

## Physician or Laboratory – Reporting address

Physician Name Dr. Shirley Heggarty

Clinic Name Belfast City Hospital

Department Regional Molecular Diagnostic

Street Lisburn Road

Town Belfast

Postal Code BT9 7AB Country Northern Ireland

Phone 02895045264

E-Mail* nirgs.bhsct@nhs.net

## Additional Recipient

Name Physician

Clinic Name

Department

Street

Town

Postal Code Country

Phone

E-Mail*

☐ I hereby confirm that the patient consented to forward the medical report to this additional report recipient.

## Promo Code – If applicable

## Billing

Quotation No.

Invoice To ☐ Patient** ☒ Institution ☐ Insurance – **Please attach cost coverage authorization**

Company Belfast HSCT (A2L010)

Department Diagnostics Service (302B7910)

Consignee Regional Genetics Belfast

Street Greenmont House

Town Ballymena

Postal Code BT42 4TP Country Northern Ireland

Phone

VAT ID*** XI888808059

E-Mail* bso.nonpop@hscni.net

**** In Case of Direct Billing to the Patient:** ☐ The patient authorized to request the test(s) outlined on page 1. The patient was also informed about the resulting costs (and possibly applicable German 19 % VAT) and requested to be billed directly by e-mail. The address given above is the patient's billing address.

Date Name of the treating physician Signature of the treating physician

* Mandatory
** Mandatory for institutional customers in the EU

The Terms & Conditions of CENTOGENE GmbH, which are available on www.centogene.com, apply to your order.
Your specific order will be invoiced at the specific prices as listed on www.centogene.com at the time of receipt of your order.

# Diagnostics — Information Sheet

Dear Patient,

Your physician recommends a biochemical and/or genetic analysis ("**Analysis**") for you or the patient for whom you are the custodian or legal guardian ("**you**" or "**Patient**") for a possible diagnosis of the disease stated in the "Informed Consent Form" below.

**CENTOGENE shall only perform the Analysis. It remains the sole responsibility of the treating physician to interpret the result(s) of such Analysis and to inform you or the Patient of the results of the overall genetic testing.**

In the following we shall inform you or the Patient about the testing procedure, possible results, and potential risks. You or the Patient may wish to consult with a genetic counselor before signing the Informed Consent Form.

The Analysis aims to identify the cause of a suspected disease by analyzing biological material of the Patient, including but not limited to genetic material ("**DNA**") for an abnormal change ("**Variant**") which eventually could explain the disease that the Patient or family members are suffering from. DNA encodes the relevant genetic information necessary for the development, function, growth and reproduction of humans. Depending on the case, the Analysis will look for a single gene/variant responsible for a specific, suspected genetic disease, or Variants in multiple genes (gene panels, whole exome or genome sequencing) at the same time.

The sample required for the Analysis may be biological material, typically blood, but may also be purified DNA, tissue, saliva or buccal swab, or raw DNA sequencing data, representing the genetic information from such biological material and in which case CENTOGENE does not perform the processing of the biological material, but receives only the resulting raw data files (each, together or separately a "**Sample**") or a combination of Samples, e.g. biological material and raw DNA sequencing data.

**Possible results from the genetic analysis**

- A disease-causing Variant is identified which confirms the diagnosis by the physician or helps the physician to determine a diagnosis. The physician is solely responsible for determining a diagnosis and will discuss the results with you or the Patient and may suggest appropriate medical treatment if available
- A Variant is identified but currently, there is not enough scientific and/or medical information available to determine whether this is a disease-causing variant or not. The physician will discuss the results with the Patient and will explain what further options may be available
- The Analysis does not identify relevant Variants which can explain the symptoms. This might be due to current limitations in scientific and/or medical knowledge and/or technology. However, such results do not rule out in full the possibility of a genetic disease or predisposition to such a disease

**Family relationship findings**

If several family members are tested, accurate interpretation of the results depends on the information provided concerning familial relationships. If the Analysis reveals that reported familial relationships are not true biological relationships, we will only report such findings in the results where it is necessary for the correct medical interpretation of the requested Analysis.

**Reanalysis**

Diseases, genes and Variants are subject to ongoing scientific research, thus it may be beneficial to re-evaluate your or your Patient's Sample ("**Reanalysis**"), when new findings have been discovered. Hence, if related to your or your Patient's health status, CENTOGENE may review your or your Patient's Sample for clinically relevant Variants, whereas only the raw DNA sequencing data will be subject to a Reanalysis. If any results are being found differently than in the original report, this information will be stated in an updated report to you or the treating physician. There is also a possibility to actively request a Reanalysis of the Sample by you or your Patient in the absence of new clinical information (whereas it is recommended to wait at least one year from the original Analysis) or any time when a Patient presents a new phenotype.

**Only relevant for Whole Exome Sequencing (WES) and Whole Genome Sequencing (WGS)**

When performing WES and WGS, numerous Variants in various genes are simultaneously analyzed. Due to the nature of this Analysis, it is possible that a pathogenic Variant discovered unintentionally is not related to the cause of the investigated disease but is still considered medically relevant due to its clear and immediate medical significance to you or the Patient's health or the health of family members. In this regard thefollowing findings may occur:

(1) The American College of Medical Genetics ("**ACMG**") has published guidelines for the reporting of findings, which are known as "Secondary Findings" (formerly "Incidental Findings"). Please refer to the latest version of the "ACMG Recommendations for Reporting of Secondary Findings in Clinical Exome and Genome Sequencing" at www.acmg.net. These recommendations form the basis for CENTOGENE's reporting of Secondary Findings.
(2) In addition, CENTOGENE may consider reporting further non-ACMG recommended findings, which are called "Carriership Findings". Carriership Findings include mainly findings indicating carrier status for recessive disorders, provided these Variants have been subject to CENTOGENE's prior evaluation.

While the Carriership Findings are not included within the ACMG recommendations, these findings can still help to prevent or significantly reduce morbidity and mortality. Interpretation of the Variants/carrier status is based on information available at the time of the Analysis and may change in the future as medical knowledge advances. We are unable to guarantee that the Analysis will find all medically actionable conditions for which a pathogenic or likely pathogenic Variant might exist. Secondary and/or Carriership Findings will only be reported if consent is given by you or the Patient.

**Potential risks**

(1) If a blood sample is provided, there can be transient secondary bleeding and pain at the spot of the puncture and, rarely, local allergic reactions; the puncture can also result in bruising. However, these effects usually go away quickly. In very rare cases, the needle can damage a blood vessel or injure a nerve. Nevertheless, the spot of the puncture usually heals with no permanent effects. There are no further health risks associated with the Analysis.
(2) The communication of the results of the Analysis may result in psychological stress for you or the Patient and family members.
(3) If (optional) consent has been provided accordingly below, your or the Patient's biochemical, genetic, and health data, including results of the Analysis may be shared with external doctors, scientific institutions, and/or (pharmaceutical) companies for their own scientific (including commercial) research, but solely in de-facto anonymized form. Nevertheless, the risk of re-identification of you or the Patient as a person cannot be completely excluded in theory, due to the uniqueness of genetic information. Such risk increases if and to the extent more information about you or the Patient is publicly available and can be linked to you or the Patient. Therefore, we recommend to handle such information with care, and not to publish in freely accessible databases or elsewhere on the internet (e.g. for ancestryresearch), particularly not with any direct information or link to you or the Patient.

# Data Protection Notice

CENTOGENE GmbH, Am Strande 7, 18055 Rostock, Germany ("**CENTOGENE**", "**we**" or "**us**") acts as the responsible controller for the collection, use, storage, or disclosure ("processing") of your or the Patient's personal data. "**Personal data**" means any information relating to an identified or identifiable natural person. If you have any questions on CENTOGENE's data processing or want to make use of your or the Patient's data protection rights, you can contact our data protection officer directly at the address above with the addition: Attn: Data Protection Officer, or via email at dataprivacy@centogene.com.

**Data processing**
We collect a Sample and other personal data, including first name, last name, address, date of birth, gender, family relations, ethnicity, nationality, insurance information, Patient code number (CGXXXXXXXX), disease, symptoms, and other medical information, including image material if provided (Art. 6 para. 1 a); Art. 9 para. 2 a) GDPR), which will then be processed in our databank. The Sample is analyzed using state-of-the-art scientific methods and the extracted data is processed with the collected data in our databank. We then provide the results containing biochemical, genetic and health data to you or the treating physician. Unless you consent otherwise as set out below, this data will be anonymized, which means that it will not be possible to reidentify you or the patient. However, the data may be of scientific importance when improving diagnosis and treatment of rare diseases, including scientific publications.

**Data storage**
We archive the personal data and Sample for up to 10 years after the last result has been reported. We delete or anonymize the personal data and destroy the biological material thereafter if this has not already happened. You or the Patient also have/has the option to process the personal data and donate the Sample for scientific (including commercial) research purposes. Then, personal data and Sample will be stored for up to 20 years after the last result has been reported. After this 20-year period has passed, the Sample may be anonymized and stored in our archive in anonymized form for further scientific (including commercial) research purposes.

**Recipients of personal data**
In principle, we process personal data ourselves. Any transfer of personal data to a third party only takes place (1) with either explicit consent, (2) in order to fulfil a legal obligation or (3) if such transfer is permitted by law:

- We use third-party services, e.g. IT-service providers that maintain our systems or data centres which host such systems. Such third-party services are considered as data processors under GDPR. These data processors are carefully selected, contractually bound to comply with data protection laws, subject to our instructions and regular monitoring and only allowed to use the data they receive to fulfil their contractual obligations. We always conclude GDPR-compliant data processing agreements with such data processors
- If consent has been provided accordingly, we may provide biochemical, genetic and health data, including results of the Analysis — solely in de-facto anonymized form — to external physicians, scientific institutions and/or (pharmaceutical) companies for their own scientific (including commercial) research
- We provide the results of the Analysis and if requested the raw DNA sequencing data to the treating physician and/or eventually to the requesting laboratory and may provide the results of the Analysis to other health care professionals who are involved in your or the Patient's medical counseling and/or clinical care

**International data transfer**
The Sample will be analyzed and processed in Germany. In principle, we process personal data solely within Germany, the European Union, and the European Economic Area ("**EEA**"), where GDPR-provisions apply. If the treating physician, and other recipients are located in a so-called third country outside the EEA where GDPR provisions do not apply, your or the Patient's personal data shall be transferred to this third country. Such transfer will only take place with your or the Patient's consent.

If we engage a data processor based outside the EEA, we may transfer the personal data to such third country, provided that, either (1) the European Commission has decided that this third country already provides an adequate level of data protection or (2) we establish appropriate data protection safeguards with the data processor, e.g. by concluding so-called "standard contractual clauses", respectively including supplemental clauses containing additional safeguards. In such cases, you or the Patient have/has a right to request a copy of these "standard contractual clauses". To do so, please contact our data protection officer.

**Your/the Patient's data protection rights under the GDPR:**

- Right to withdraw your consent regarding data processing with future effect
- Right of access
- Right to data portability
- Right to rectification
- Right to erasure
- Right to restriction of processing
- **Right to object**
- Right to lodge a complaint with a supervisory authority

**Additional rights under the German Genetic Diagnostics Act (Gendiagnostikgesetz) are:**

- Right to withdraw your or the Patient's consent to the Analysis (until such has been performed)
- Right to request destruction of the Sample (as long as it has not yet been anonymized)
- Until the moment you or the Patient has been given the results of the Analysis, the right not to be informed about such results in full or in part (right not to know); and the right to request destruction of all such results

To exercise the rights, please contact our data protection officer.

**Disclaimer:**
Please note that biochemical and/or genetic analysis are not definitive. Due to limitations in technology and/or incomplete medical knowledge, some disease-causing variants may not be detected. Therefore, it is not possible to completely exclude all risks for all possible genetic diseases. Moreover, in some cases, the Analysis may indicate a genetic abnormality when you or the Patient are/is actually unaffected (false positive) or may indicate no genetic abnormality when you or the Patient are/is actually affected (false negative).

**IN CASE OF THE UNDERLYING CAUSE OF A FALSE-POSITIVE OR FALSE-NEGATIVE FINDING COULD NOT BE IDENTIFIED BY CENTOGENE, CENTOGENE SHALL NOT BE RESPONSIBLE FOR THE INCOMPLETE, POTENTIALLY MISLEADING OR INCORRECT RESULT OF AN ANALYSIS.**

# Diagnostics — Informed Consent Form

## Suspected Disease (to be completed by the treating physician)

With my signature below, I confirm or confirm on behalf the Patient for whom I am the custodian or legal guardian (hereinafter, "I" or "the Patient") that I or the Patient have/has received, read and understood the preceding written explanation about the biochemical and/or genetic analysis ("**Analysis**"). I or the Patient have/has been adequately informed regarding the purpose, scope, type and significance of such analysis, possible results and possible risks. The responsible physician has informed me or the Patient about possible prevention/treatment measures of the suspected disease. Furthermore, I confirm that I have had sufficient opportunities to ask questions and such questions were answered in an understandable manner and to my or the Patient's full satisfaction.

## Consent to the Biochemical and/or Genetic Analysis and Related Data Processing

**By signing this Informed Consent Form, I consent or consent on behalf the Patient for whom I am the custodian or legal guardian**
(1) to an Analysis of my or the Patient's Sample by CENTOGENE GmbH, Am Strande 7, 18055 Rostock, Germany ("CENTOGENE") for a possible diagnosis of the disease specified above; (2) to the processing of my or the Patient's personal data to perform such Analysis, as specified in the Information Sheet; (3) to provide the results of the Analysis to the treating physician and to be informed by the treating physician of the results of the Analysis; (4) to provide the results of the Analysis to health care professionals, who are involved in my or the Patient's medical counseling and/or clinical care, if so requested by the treating physician; (5) to provide the results of the Analysis to the requesting laboratory, as instructed by the treating physician; (6) to provide raw DNA sequencing data of the Analysis, upon request, to the treating physician and/or the requesting laboratory; and (7) to store the personal data and the Sample for up to 10 years after CENTOGENE has reported the last result and to anonymize the personal data.

Furthermore — if the following recipients are located in a so-called third country outside the European Economic Area, where GDPR provisions do not apply — I consent to the transfer of my or the Patient's personal data to this third country, in particular (1) to provide the results of the Analysis and the raw data to the treating physician and/or the requesting laboratory; and (2) to provide the results of the Analysis to the health care professionals who are involved in my or the Patient's medical counseling and/or clinical care. I acknowledge that such third country may not provide a level of data protection equivalent to the GDPR and may grant fewer or less enforceable data protection rights and no independent data protection supervisory authority to assist in exercising these rights.

## Optional Consent for Reporting of Secondary (Incidental) and/or Carriership Findings

**Only relevant for Whole Exome Sequencing (WES), and Whole Genome Sequencing (WGS)**
I understand the significance of Secondary and/or Carriership Findings and consent, that CENTOGENE

| | |
|---|---|
| (1) reports the ACMG recommended Secondary Findings. | ☐ YES |
| (2) reports further non-ACMG recommended Carriership Findings. | ☐ YES |

I am aware that CENTOGENE — at its own discretion — may refrain from reporting the Secondary and/or Carriership Findings.

## Optional Consent to Further use of the Sample and Personal Data

I understand that my or the Patient's Sample and personal data may enable CENTOGENE to develop and improve diagnostic methods and therapeutic solutions for genetic diseases in general. This may help myself, my family members, and other patients in the future. However, such voluntary consent is not necessary to conduct the Analysis as specified above.

I acknowledge that I or the Patient will not receive any compensation for the donation of the Sample and provision of personal data. I waive any claims for compensation, royalties, or other financial benefits that may arise from scientific (including commercial) research usage of the Sample and personal data.

(1) I consent to the usage of my or the Patient's Sample and personal data by CENTOGENE for scientific (including commercial) research, which focuses on the cause, early detection and/or treatment of rare diseases in general. I acknowledge that the Sample and data will be used in the interest of the greatest possible benefit to the general public for research which aims to improve the prevention, detection and treatment of rare diseases. Such includes but is not limited to disease areas such as metabolic disorders, neurodegenerative disorders, cardiac disorders and malformations as well as to diseases and genetic relationships that are still unknown today. As in any research on rare diseases — particularly due to the latest findings in genetic diagnostics — it is usually not possible to predict in detail which research questions and matters will be addressed in the future. Therefore, the specific research purpose cannot be detailed herein, and the Sample and data may also be used for medical research projects that cannot be foreseen today.
(2) I consent that CENTOGENE shares my or the Patient's biochemical, genetic, and health data, including the results of the Analysis — solely in de-facto anonymized form — with external doctors, scientific institutions, and/or (pharmaceutical) companies for their own scientific (including commercial) research. I acknowledge that "de-facto anonymized" means that the data available at CENTOGENE is altered in such a way, including redaction and removal of any pseudonyms, that re-identification of me or the Patient as a person for any further recipient of the data is practically impossible. However, the confidentiality risks described in the Information Sheet persist.
(3) I consent that CENTOGENE stores my or the Patient's Sample and personal data for 20 years after the last result has been reported and I hereby donate and transfer ownership of my or the Patient's Sample to CENTOGENE for further scientific (including commercial) research, which focuses on the cause, early detection and/or treatment of rare diseases in general. I acknowledge that after 20 years — once the identifying data was deleted — the Sample will become anonymized and will remain in CENTOGENE's archive — in anonymized form — for such scientific (including commercial) research. In anonymized form means, that CENTOGENE cannot identify me or the Patient as a person from such Sample anymore.

☐ YES

I understand that the consent(s) is/are voluntary and valid until such time as I choose to withdraw consent. The consent with regard to the Analysis and the optional consent for Secondary and/or Carriership Findings can be withdrawn until such has been performed; and (2) the processing of the personal data can be withdrawn at any time. Furthermore, the destruction of the Sample can be requested as long as it has not yet been anonymized; in each case with effect for the future. Until the moment the results of the Analysis have been provided to me or the Patient, I understand that I have the right (1) not to be informed about such results (so called right not to know); and (2) to request the destruction of all such results. To withdraw the consent and/or to exercise the rights, I may contact CENTOGENE's data protection officer.

| Date | Name and date of birth (DD.MM.YYYY) of the Patient | Signature of the Patient, and/or custodian/legal guardian |
|---|---|---|
| ..... | ..... | ..... |

## For Duo and Trio (only applies to additional Patient(s) 2 and 3)

Please read the detailed information on the optional consents as described above.
**Optional consent to further use of the Sample and personal data**

(1) I consent to the usage of my or the Patient's Sample and personal data by CENTOGENE for scientific (including commercial) research, which focuses on the cause, early detection and/or treatment of rare diseases in general.
(2) I consent that CENTOGENE shares my or the Patient's biochemical, genetic, and health data, including the results of the Analysis — solely in de-facto anonymized form — with external doctors, scientific institutions, and/or (pharmaceutical) companies for their own scientific (including commercial) research.
(3) I consent that CENTOGENE stores my or the Patient's Sample and personal data for 20 years after the last result has been reported and I hereby donate and transfer ownership of the Patient's Sample to CENTOGENE for further scientific (including commercial) research, which focuses on the cause, early detection and/or treatment of rare diseases in general.

| Patient 2 | Patient 3 (if applicable) |
|---|---|
| ☐ YES | ☐ YES |

## Optional Consent for Reporting of Secondary (Incidental)

**Only relevant for Whole Exome Sequencing (WES), and Whole Genome Sequencing (WGS)**
I understand the significance of Secondary Findings and consent, that CENTOGENE

reports the ACMG recommended Secondary Findings.

| Patient 2 | Patient 3 (if applicable) |
|---|---|
| ☐ YES | ☐ YES |

I am aware that CENTOGENE — at its own discretion — may refrain from reporting the Secondary (Incidental) and/or Additional Findings.

| Date | Name and date of birth (DD.MM.YYYY) of the Patient 2 | Signature of the Patient 2, and/or custodian/legal guardian |
|---|---|---|
| ..... | ..... | ..... |

| Date (if applicable) | Name and date of birth (DD.MM.YYYY) of the Patient 3 (if applicable) | Signature of the Patient 3, and/or custodian/legal guardian (if applicable) |
|---|---|---|
| ..... | ..... | ..... |

**Notice to the treating physician**
The applicable law requires informed consent from your Patient to be able to perform a biochemical and/or genetic analysis. Please ask your Patient to sign the informed consent form. Alternatively, please confirm with your signature that the Patient has consented accordingly and that you have such consent on file. Subsequently, please send the completed and signed informed consent form together with the information sheet and Sample(s) to CENTOGENE.

## Physician's Confirmation

I acknowledge that (1) the consent as shown above has been declared by the Patient and/or the Patient's custodian/legal guardian, (2) I have the Patient's and/or custodian's/legal guardian's signature on file if it is not shown above, (3) the Patient and/or custodian/legal guardian is capable of giving consent, (4) all questions of the Patient and/or custodian/legal guardian have been answered, (5) the Patient and/or custodian/legal guardian had the necessary time to consider the decision, and (6) the Patient and/or custodian/legal guardian until now have not exercised the right not to be informed of genetic testing results. I understand that (1) the Patient and/or custodian/legal guardian may exercise any of the rights specified in the Information Sheet and (2) I shall forward such requests to CENTOGENE without undue delay.

| Date | Name of the treating physician | Signature of the treating physician |
|---|---|---|
| ..... | ..... | ..... |