Ultragenyx Pharmaceutical Requisition Form
Sponsored MPS Testing

This testing program will be available until further notice and may be canceled at any time by the program sponsor.
Please complete every field and tick box clearly.

STEP 1: PATIENT INFORMATION

Patient's First Name | Middle Initial | Patient's Last Name

MM/ DD /YYYY
Patient's Date of Birth | Patient ID/MR Number/External Sample Number

Biological Sex: ○ Male ○ Female ○ Unknown
Gender Identity (if different from above):_____

Patient's Street Address | City / Town

State | Zip Code | Country | Patient's Preferred Phone | Patient's Email

Ethnicity (check all that apply): ○ African-American ○ Asian (China, Japan, Korea) ○ Caucasian/N. European/S. European ○ Finnish ○ French Canadian ○ Hispanic ○ Jewish - Ashkenazi ○ Jewish - Sephardic ○ Mediterranean ○ Middle Eastern (Saudi Arabia, Qatar, Iraq, Turkey) ○ Native American ○ E. Indian ○ Southeast Asian (Vietnam, Cambodia, Thailand) ○ South Asian (India, Pakistan) ○ Other (specify)_____

PATIENT SAMPLE INFORMATION

SAMPLE TYPE: ○ Whole Blood ○ Dried Blood Spots ○ Other_____ Age at Initial Presentation:_____

Collection Date: MM/DD/YY

Was this sample collected in the State of NV, NY or OR?: ○ Yes ○ No
(If yes, separate consent is required. See forms section of website.)

CLINICAL PATIENT INFORMATION

○ Patient has been previously diagnosed with MPS – Type_____ ○ Patient is being screened for suspected MPS

STEP 2: ORDERING PROVIDER

Provider's First and Last Name | NPI

Clinic/Hospital/Institution Name | Provider's Email

Provider's Street Address | City / Town | State | Zip Code | Country

Provider's Phone | Provider's Fax

SEND ADDITIONAL COPY OF RESULTS TO (If applicable)

Name | Email Address

Phone Number | Fax Number

STEP 3: BILLING INFORMATION

☒ **INSTITUTIONAL BILLING**

ULTRAGENYX — Institution/Organization Name

UXUS — Billing Account ID

STEP 4: TEST MENU

○ ULT002 > D5035 MPS Enzyme Panel (MPS I, MPS II, MPS IIIB, MPS IVA, MPS IVB, MPS VI, MPS VII); reflex to *GUSB* gene for any beta-glucuronidase deficiency (MPS VII)

STEP 7: PHYSICIAN CONFIRMATION OF INFORMED CONSENT AND MEDICAL NECESSITY

The undersigned person (or representative thereof) ensures he/she is a licensed medical professional authorized to order genetic testing and confirms that the patient has given appropriate informed consent for the testing ordered, including a discussion of the benefits and limitations. I confirm that testing is medically necessary and that test results may impact medical management for the patient. Furthermore, all information on this TRF is true to the best of my knowledge. My signature applies to the informed consent and/or attached letter of medical necessity, if applicable (unless this box is checked). ❑

Signature_____ Date_____

Sponsored by Ultragenyx Pharmaceutical

FOR INTERNAL USE ONLY				
Date Rec'd_____	Rec'd _____			
TEMP	SPEC	COL	#TUBES	VOL
R/C/F				
R/C/F				
R/C/F				

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This testing program will be available until further notice and may be canceled at any time by the program sponsor.

DETAILED MEDICAL RECORDS, CLINICAL SUMMARY, PICTURES AND FAMILY HISTORY MUST BE ATTACHED FOR ALL CASES.
CLINICAL INFORMATION IS CRUCIAL FOR ACCURATE INTERPRETATION OF RESULTS.

ADDITIONAL OPTIONAL PHENOTYPE / PATIENT HISTORY SECTION (Check all that apply)

Clinical diagnosis: _____

Age of manifestation: _____

A. NEUROLOGY

1. Behavioral abnormality

- ○ 1.1 Autism
- ○ 1.2 Attention deficit disorder
- ○ 1.3 Psychiatric diseases

2. Brain imaging

- ○ 2.1 Abnormal myelination
- ○ 2.2 Abnormal cortical gyration
- ○ 2.3 Agenesis of corpus callosum
- ○ 2.4 Brain atrophy
- ○ 2.5 Cerebellar hypoplasia
- ○ 2.6 Heterotopia
- ○ 2.7 Holoprosencephaly
- ○ 2.8 Hydrocephalus
- ○ 2.9 Leukodystrophy
- ○ 2.10 Lissencephaly

3. Developmental delay

- ○ 3.1 Delayed motor development
- ○ 3.2 Delayed language development
- ○ 3.3 Developmental regression
- ○ 3.4 Intellectual disability

4. Movement abnormality

- ○ 4.1 Ataxia
- ○ 4.2 Chorea
- ○ 4.3 Dystonia
- ○ 4.4 Parkinsonism

5. Neuromuscular abnormality

- ○ 5.1 Muscular hypotonia
- ○ 5.2 Muscular hypertonia
- ○ 5.3 Hyperreflexia
- ○ 5.4 Spasticity

6. Seizures

- ○ 6.1 Febrile seizures
- ○ 6.2 Focal seizures
- ○ 6.3 Generalized seizures

7. Others

- ○ 7.1 Craniosynostosis
- ○ 7.2 Dementia
- ○ 7.3 Encephalopathy
- ○ 7.4 Headache / Migraine
- ○ 7.5 Macrocephaly
- ○ 7.6 Microcephaly
- ○ 7.7 Neuropathy
- ○ 7.8 Stroke

B. METABOLISM

- ○ 1. Abnormal creatine kinase
- ○ 2. Decreased plasma carnitine
- ○ 3. Hyperalaninemia
- ○ 4. Hypoglycemia
- ○ 5. Increased CSF lactate
- ○ 6. Increased serum pyruvate
- ○ 7. Ketosis
- ○ 8. Lactic acidosis
- ○ 9. Organic aciduria

C. EYE

- ○ 1. Blepharospasm
- ○ 2. Cataract
- ○ 3. Coloboma
- ○ 4. Glaucoma
- ○ 5. Microphthalmos
- ○ 6. Nystagmus
- ○ 7. Ophthalmoplegia
- ○ 8. Optic atrophy
- ○ 9. Ptosis
- ○ 10. Retinitis pigmentosa
- ○ 11. Retinoblastoma
- ○ 12. Strabismus
- ○ 13. Visual impairment

D. MOUTH, THROAT AND EAR

- ○ 1. Abnormality of dental color
- ○ 2. Cleft lip / palate
- ○ 3. Conductive hearing impair.
- ○ 4. External ear malformation
- ○ 5. Hypodontia
- ○ 6. Sensoneural hearing impair.

E. SKIN, INTEGUMENT AND SKELETAL

1. Skeletal

- ○ 1.1 Abnormal limb morphology
- ○ 1.2 Abnormal skeletal system
- ○ 1.3 Abnormal vertebral column
- ○ 1.4 Joint hypermobility
- ○ 1.5 Multiple joint contractures
- ○ 1.6 Polydactyly
- ○ 1.7 Scoliosis
- ○ 1.8 Syndactyly
- ○ 1.9 Talipes equinovarus

2. Skin and integument

- ○ 2.1 Abnormal skin pigmentation
- ○ 2.2 Abnormal hair
- ○ 2.3 Abnormal nail
- ○ 2.4 Hyperextensible skin
- ○ 2.5 Ichthyosis

F. CARDIOVASCULAR

- ○ 1. Angioedema
- ○ 2. Aortic dilatation
- ○ 3. Arrhythmia
- ○ 4. Coarctation of aorta
- ○ 5. Defect of atrial septum
- ○ 6. Defect of ventricular septum
- ○ 7. Dilated cardiomyopathy
- ○ 8. Hypertension
- ○ 9. Hypertrophic cardiomyopathy
- ○ 10. Hypotension
- ○ 11. Lymphedema
- ○ 12. Malf. of heart and great vessels
- ○ 13. Myocardial infarction
- ○ 14. Stroke
- ○ 15. Tetralogy of Fallot
- ○ 16. Vasculitis

G. GASTROINTESTINAL, GENITOURINARY, ENDOCRINE

1. Gastrointestinal

- ○ 1.1 Aganglionic megacolon
- ○ 1.2 Constipation
- ○ 1.3 Diarrhea
- ○ 1.4 High hepatic transaminases
- ○ 1.5 Gastroschisis
- ○ 1.6 Hepatic failure
- ○ 1.7 Hepatomegaly
- ○ 1.8 Obesity
- ○ 1.9 Pyloric stenosis
- ○ 1.10 Vomiting

2. Genitourinary

- ○ 2.1 Abnormal renal morphology
- ○ 2.2 Abnormal urinary system
- ○ 2.3 Hydronephrosis
- ○ 2.4 Renal agenesis
- ○ 2.5 Renal cyst
- ○ 2.6 Renal tubular dysfunction

3. Endocrine

- ○ 3.1 Diabetes mellitus
- ○ 3.2 Hypo / hyperparathyroidism
- ○ 3.3 Hypo / hyperthyroidism

H. REPRODUCTION

- ○ 1. Abnormal external genitalia
- ○ 2. Abnormal internal genitalia
- ○ 3. Hypogonadism
- ○ 4. Hypospadias
- ○ 5. Infertility

I. ONCOLOGY

- ○ 1. Adenomatous polyposis
- ○ 2. Breast carcinoma
- ○ 3. Colorectal carcinoma
- ○ 4. Leukemia
- ○ 5. Myelofibrosis
- ○ 6. Neoplasm of the lung
- ○ 7. Neoplasm of the skin
- ○ 8. Paraganglioma
- ○ 9. Pheochromocytoma

J. HEMATOLOGY AND IMMUNOLOGY

- ○ 1. Abnormality of coagulation
- ○ 2. Anemia
- ○ 3. Immunodeficiency
- ○ 4. Neutropenia
- ○ 5. Pancytopenia
- ○ 6. Abnormal hemoglobin
- ○ 7. Splenomegaly
- ○ 8. Thrombocytopenia

K. PRENATAL AND DEVELOPMENT

- ○ 1. Dysmorphic facial features
- ○ 2. Failure to thrive
- ○ 3. Hemihypertrophy
- ○ 4. Hydrops fetalis
- ○ 5. IUGR
- ○ 6. Oligohydramnios
- ○ 7. Overgrowth
- ○ 8. Polyhydramnios
- ○ 9. Premature birth
- ○ 10. Short stature
- ○ 11. Tall stature

OTHER:

revvity

ULTRAGENYX PHARMACEUTICAL
U.S. CLINICAL INFORMED CONSENT FORM

Revvity Omics, Inc., ("Revvity") requires a completed Patient's Informed Consent Form (ICF) for testing to be performed. The ICF must be completed by the patient, or a legally authorized representative of the patient (or by the healthcare provider where permitted under applicable law or regulation). For any patient below the age of majority, the ICF must be completed by the patient's legally authorized representative.

The purpose of this ICF is to provide you with a description of the Test ordered, known risks and benefits of the Test, anonymization of personal health information ("PHI"), sample and data retention, research opportunities, and the reporting of secondary findings, if applicable. Given the complexity of the type of the Test, it is recommended that you and/or your child receive genetic counseling by a trained genetics professional before and after the testing is performed. There is no cost to you for the Test(s). Funding is provided by Ultragenyx Pharmaceutical.

TEST INFORMATION

Your healthcare provider ("HCP") has recommended that you or your child, receive enzymatic, biochemical or molecular genetics clinical testing ("Test") indicated on the submitted Test Requisition Form ("Requisition"). For more information on the reasons your HCP has ordered the Test, and the disorders your HCP is having you tested for, please consult with your HCP. You are free to decide if you want this Test performed or not. Providing a Sample and undergoing the Test is voluntary and you may withdraw your consent without penalty at any time.

Enzyme/Biomarker Test: This type of test measures the presence or absence of enzymes/biomarkers and/or their level of activity in an individual. Only the enzymes/biomarkers identified on the requisition will be tested. Results from this type of Test may indicate the presence of a specific condition or conditions, and follow-up confirmatory testing may be recommended.

Genetic/Genomic Test: This type of Test looks at the genes in your DNA. This Test is used to identify what, if any, DNA variant(s) you or your child is carrying which is causing the specific disease or condition you are being tested for. Identifying the mutation may be useful for diagnostic and treatment purposes, and allows at-risk family members to be tested. Only the genes identified on the Requisition will be analyzed. In some cases, we may not be able to determine with certainty which gene is actually causing the disease.

TEST METHOD

If you consent to the Test, your HCP will take a sample of your and/or your child's blood, saliva, body fluid, tissue or other sample type. Your Sample will be sent to Revvity's laboratories in the United States for the Test; the enzyme activity, biomarker tests, and select genetic testing assays will be conducted in Pennsylvania, USA, and all other genetic testing will be conducted in Connecticut, USA.

Under some circumstances, including inadequate or poor quality sample, an additional Sample may be required for Tests to be performed.

TEST RESULTS

Your treating HCP has sole responsibility for all decisions concerning the possible management of your diagnosis and disease; Revvity will not provide a diagnosis. Revvity will report Test results only to your HCP via secure email, a secure internet portal, or fax. Your HCP is responsible for communicating with you regarding the results of the Test and may refer you or your child to a specialist for further clinical evaluation and confirmation of diagnosis, if applicable. Possible results include:

1. *Positive:* A positive genetic test result may indicate that you are a carrier of, predisposed to, or have the specific disease or condition being tested for. A positive genetic test may limit your access to health insurance or life assurance coverage; for example, a life insurance company might ask you to provide genetic information indicating a disorder if this information is available to you.
2. *Negative:* A negative result indicates that the enzyme/biomarker results were within normal ranges, or that no disease-causing variant was identified in the Test performed. No Test can rule out all genetic diseases or conditions. A negative result does not guarantee that you are free from genetic disorders or other medical conditions.
3. *Inconclusive/Variant of Uncertain Significance:* A variant of uncertain significance (VOUS) result indicates that a variant outside of the normal range was detected, but it is currently unknown if the variant is associated with a genetic disorder. A VOUS is not the same as a positive result and does not clarify whether there is an increased risk to develop a genetic disorder. The variant could be a benign change or it could be indicative of disease/disease-causing.
4. *Unexpected Results:* In rare instances, this Test may reveal an important genetic change that is not directly related to the reason for ordering this test. This information would be disclosed to your HCP if it potentially impacts medical care, and you have consented to receive this type of result

TEST REPORT

Reported disease-causing variants are described as pathogenic variant(s), likely pathogenic variants(s), or variant(s) of uncertain significance in genes interpreted to be responsible for, or potentially contributing to, a disease or condition. In addition, variants in genes not known to be associated with disease but for which there is evidence to suggest an association with disease may also be reported.

INFORMATION ABOUT PARENTAL AND FAMILIAL SAMPLES

In some circumstances, it may be helpful for additional family members to undergo testing in order to provide information that can aid in the interpretation of the test results. These Tests could be part of a TRIO Test or as stand-alone targeted testing. Revvity, in consultation with the HCP, will decide if other family members need to be tested. If the HCP recommends testing for additional family members, only the Test performed will be reported. If undergoing a TRIO test for Whole Exome Sequencing or Whole Genome Sequencing (WES or WGS), parents will have the option of receiving a full parental report for an additional charge. If selected, the respective parental consent section must be completed below.

TEST LIMITATIONS

Due to current limitations in technology and incomplete knowledge of diseases and genes, some variants may not be detected by the Test ordered. There is a possibility that the Test result that is uninterpretable or of unknown significance may require further testing when more information is gained. In rare circumstances, Test results may be suggestive of a condition different from that which was originally considered for the purpose of consenting to this Test. The Test may also find variants or genes that lead to conditions for which you currently do not have symptoms or may not be related to your current condition.

TEST RISKS

Patients and family members may experience anxiety before, during, and/or after testing. Testing multiple family members may reveal that familial relationships are not biologically what they were assumed to be. For example, the Test may indicate non-paternity (the stated father of an individual is not the biological father) or consanguinity (the parents of an individual are closely related by blood). These biological relationships may need to be reported to the HCP who ordered the test.

Taking a blood or tissue sample from you and/or your child may lead to mild pain, bruising, swelling, redness, and a slight risk of infection. Light-headedness, fainting or nausea may occur if your HCP collects blood or tissue samples. These side-effects are typically brief and transient, but you should contact your HCP if you and/or your child require treatment. Under some circumstances an additional sample may be required for Tests to be performed.

A positive test result may limit your access to health insurance or life assurance coverage; for example, a life insurance company might ask you to provide genetic information indicating a disorder if this information is available to you. Please refer to information on the Genetic Information Nondiscrimination Act (GINA) and applicable local laws for more information.

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CONFIDENTIALITY

You have the right to confidential treatment of the Sample and your PHI. Your HCP will provide Revvity with Personal Health Information ("PHI") such as your name, date of birth, gender and clinical symptoms to help track your sample and report results. To maintain confidentiality, the test results will only be released to the referring health care provider, to the ordering laboratory, to the patient/guardian, to other health care providers involved in your diagnosis and treatment, or as otherwise required by law or regulation. Unless required by law, Revvity will not disclose your PHI to any person or entity except with your written consent.

You and your HCP can control how your Sample and PHI are processed. You have the right to request access to your PHI, request corrections of any errors in recorded PHI, or where PHI may be missing or incomplete ask that it be completed. You also have the right to ask that your PHI be erased, subject to law or regulation. You can contact your HCP for such requests and your HCP will contact Revvity, or you can contact Revvity directly by visiting www.revvity.com. If requests for access, correction, completion, or erasure cannot be fulfilled, you will be informed and provided with the reasons why your requests cannot be fulfilled.

SAMPLE AND DATA RETENTION

Pursuant to laboratory best practices, your DNA sample will be retained by Revvity for a minimum of two years and then destroyed. Additionally, your PHI, the data from the Tests (including those performed before any withdrawal of consent) and the related reports will be retained by Revvity for a minimum of two years and then destroyed. In some instances, it may be beneficial to you for Revvity to retain your sample for a longer period of time in order to conduct additional testing, and Revvity will do so with appropriate documentation from you or your HCP.

Revvity is requesting consent to keep you and/or your child's anonymized sample and data indefinitely. This consent is optional, and the Test will be performed whether or not you provide consent to the following:

- Revvity will anonymize and retain your Sample indefinitely for internal quality control, test validation, assay development and improvement. By allowing Revvity to retain your Sample, you understand and agree that you give up any property rights you may have in the Sample and are donating it to Revvity Omics, Inc. If you withdraw your consent, no additional tests or anonymization will be carried out on your Sample; no results will be reported and your sample, reports and data that have not been anonymized will be destroyed.
  - ❑ Check here if you would like to opt out of anonymized sample retention. Note, if not checked, this is interpreted as "consent given"
- Revvity will anonymize your data and retain the anonymized data and related anonymized reports from your Tests indefinitely for internal statistical, quality analysis, research, scientific and technical development, and market research.Revvity may also share your anonymized data and anonymized report with third parties including Ultragenyx Pharmaceutical.
  - ❑ Check here if you would like to opt out of anonymized data retention. Note, if not checked, this is interpreted as "consent given"

For residents of the State of NV, NY or OR:

❑ By checking here I give Revvity permission to store my sample for longer than 60 days. Note, if not checked, this is interpreted as "consent not given"

RESEARCH OPTIONS

Revvity may collaborate with scientists, researchers and drug developers to advance knowledge of genetic diseases. If there are opportunities to participate in future research relevant to the disease in you and/or your child, Revvity may contact you or your HCP about the development of new testing, drug development, or other treatments.

WITHDRAWAL OF CONSENT

I understand this consent is voluntary and is valid until I withdraw my consent. I understand I may withdraw my consent to sample and data retention, and to the Test at any time, that Revvity will not perform the Test unless I provide consent to the Test. If I withdraw any consent, it will not affect actions taken before I withdrew my consent, including any anonymization of data or of my Sample. I understand that if I wish to withdraw my consent I should contact Revvity via email at: genomics@revvity.com or toll-free by telephone +1-866-354-2910 to request withdrawal.

PATIENT CONSENT TO TESTING

❑ By checking this box I attest:

I have read and understood the Informed Consent Form in its entirety, including the explanation of why my sample is being tested, how genetic testing is performed and the risks associated with genetic testing. I have had the opportunity to ask my HCP questions about the information contained herein, and understand that I am entitled to a copy of this ICF. My signature below acknowledges my free consent to the Test, and to any additional consents indicated above, and such testing in no way guarantees my health, the health of an unborn child, or the health of other family members.

Patient Signature (or Parent/Guardian if patient is minor)	Date
Patient Name	Name and Relationship (Parent/Guardian if patient is minor)

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