

Tuberous Sclerosis Complex Panel by Next-Gen Sequencing (TSCP-NG)

Ordering Information

Acceptable specimen types:

- Fresh blood sample (3-6 ml EDTA; no time limitations associated with receipt)
- Saliva (OGR-575 DNA Genotek; kits are provided upon request)
- DNA (extracted from lymphocyte cells; a minimum volume of 25µL at 3µg; O.D. of 260:280nm ≥1.8; must be extracted in a CLIA or equivalent certified lab)
- Flash frozen angiofibroma tumor tissue sent on dry ice
- Fresh angiofibroma tumor tissue, immersed in sterile culture media (PBS/RPMI)

Turnaround time:

30 working days for blood, saliva, or DNA; 40 working days for fresh/frozen tumor or tumor DNA

Price, CPT codes, and Z code:

\$1,500 for blood, saliva, or DNA (USD – institutional/self-pay);

\$2,500 for fresh/frozen tumor (USD – institutional/self-pay);

CPT: 81479, 81406, and 81405

Z code: ZB68E

Candidates for this test:

Patients with clinical features suggestive of Tuberous Sclerosis Complex

Specimen shipping and handling:

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- Please find acceptable specimen type above.
- All submitted specimens must be sent at room temperature. DO NOT ship on ice.
- Specimens must be packaged to prevent breakage and absorbent material must be included in the package to absorb liquids in the event that breakage occurs. Also, the package must be shipped in double watertight containers (e.g. a specimen pouch + the shipping company's diagnostic envelope).
- To request a sample collection kit, please visit the website or email medgenomics@uabmc.edu to complete the specimen request form.
- Please contact the MGL (via email at medgenomics@uabmc.edu, or via phone at 205-934-5562) prior to sample shipment and provide us with the date of shipment and tracking number of the package so that we can better ensure receipt of the samples.

Required forms:

- Test Requisition Form
- Form for Customs (for international shipments)

Note: Detailed and accurate completion of this document is necessary for reporting purposes. The Medical Genomics Laboratory issues its clinical reports based on the demographic data provided by the referring institution on the lab requisition form. It is the responsibility of the referring institution to provide accurate information. If an amended report is necessary due to inaccurate or illegible documentation, additional reports will be drafted with charge.

Requests for testing may not be accepted for the following reasons:

- No label (patients full name and date of collection) on the specimens
- No referring physician's or genetic counselor's names and addresses
- No billing information
- DNA samples must be extracted in a CLIA or equivalent certified lab

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For more information, test requisition forms, or sample collection and mailing kits, please call: 205-934-5562.

Disorder Background

Tuberous sclerosis complex (TSC) is a rare autosomal dominant disorder involving abnormalities of the skin, brain, kidney, heart and lungs. CNS tumors are seen commonly in patients with TSC. Heterozygous pathogenic variants can be identified in 75%-90% of individuals who meet the clinical diagnostic criteria for TSC (Northrup H. et al, 2013: Ped. Neurology 49:243-4). Among those in whom a pathogenic variant can be identified, pathogenic variants in *TSC1* and *TSC2* are found in 31% and 69% of cases, respectively (Ozgun et al. Eur J Hum Genet. 2005;13:731–41)

Test Description

The **Tuberous Sclerosis Complex panel by NGS** involves the simultaneous sequencing of 2 genes: *TSC1* and *TSC2*. **The average coverage is >1600x with >99% of the coding region covered at $\geq 350x$ and $>99\% \geq 200x$.** The minimum coverage for any additional areas is $>30x$. This allows for detection of very low level mosaicism by sequencing (as low as 8% of the alleles in all regions analyzed by NGS; $>99\%$ of the coding region does provide deeper coverage with the ability to identify substitution variants as low as 3% of the alleles). Variant and copy number calls are made using a unique bioinformatics pipeline detecting all types of variants including single nucleotide substitutions, indels and frameshifts caused by deletion or duplication up to 112bp. Deletion/duplication analysis for *TSC1* and *TSC2* is included in this test, as such variants are a part of the variant spectrum for these conditions.

Relevant family members of a proband with any (novel or previously identified) variant of unknown significance are offered free of charge targeted analysis as long as accurate phenotypic data are provided by a health care professional to enhance the interpretation. There is no limitation to the number of relatives that can be tested free of charge.

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Analysis can be performed on fresh or frozen affected tissue via next-generation sequencing.

REFERENCES available on website.