

**UCLA DIAGNOSTIC MOLECULAR PATHOLOGY LABORATORY**  
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## Twin Zygosity

### ↑CPT

83891 (x4); 84311 (x4); 83900 (x8); 83901 (x8); 83909 (x8); 83912

No parent specimens: 83891 (x2); 84311 (x2); 83900 (x6); 83901 (x6); 83909 (x6); 83912

### ↑Related Information

### ↑Synonyms

DNA Fingerprinting; Genetic identification by DNA

### ↑Test Includes

Determining zygosity of twins

### ↑Laboratory

Molecular Pathology

### ↑Availability

Monday-Friday, 0700-1700

### ↑Turnaround Time

3-28 days after receipt of all of the specimens

### ↑Specimen

Whole blood, amniotic fluid; blood samples from both parents are also strongly recommended.

## **↑ Volume**

4 mL of blood; 10 mL of amniotic fluid

## **↑ Container**

Lavender top (EDTA) tube

## **↑ Storage Instructions**

All specimens should be sent to the Laboratory immediately after collection, preferably by overnight delivery. Specimens should be kept at room temperature or refrigerated but not frozen.

## **↑ Patient Preparation**

Patient should receive no transfusions 90 days prior to testing, and should be at least 3 weeks old.

## **↑ Causes for Rejection**

Blood samples frozen and thawed will yield low quality DNA; specimens inadequately identified

## **↑ Reference Range**

Exact identity of both alleles at all genetic loci tested provides strong evidence of monozygosity (usually >99.9%), a mismatch of two or more loci is considered conclusive evidence of dizygosity.

## **↑ Use**

Examination of DNA fingerprint patterns, which are unique to each individual except for identical twins, is the most powerful method for determining zygosity of twins. This evaluation may be useful in the setting of bone marrow transplantation, in studying apparent discordance for a genetic disorder, or for other genetic counseling situations.

## **↑ Limitations**

The conclusion of monozygosity will always be at a probability level of slightly <100% because of the nature of matching probabilities in DNA fingerprinting studies. If one or both parents are homozygous at one or more of the loci tested, the power and informativeness of the testing will be reduced to a variable degree. If parental samples are not available, more conservative estimates of the probability of monozygosity must be used.

## **↑Methodology**

Polymerase Chain Reaction (PCR) analysis of polymorphic short tandem repeats

## **↑Additional Information**

The genetic material of humans is highly polymorphic, and an individual's genotype represents a unique pattern which determines that person's identity and heredity. The only exception to this rule is identical twins, since they are derived from a single fertilized egg and hence have the same DNA profile. As a general rule, DNA is constant in all tissues of the body (even prenatal samples such as amniotic cells and chorionic villi specimens). DNA isolated from any specimen from an individual will be identical, which can prove to be very valuable in forensic evidence. Identity for multiple polymorphic markers indicates a high probability of monozygosity.

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