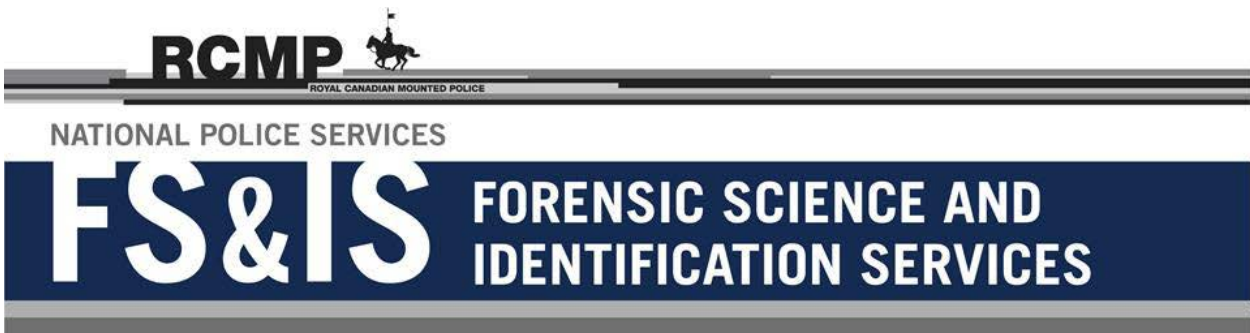




Biology Services PRODUCTS OF CONCEPTION INFORMATION SHEET

INTRODUCTION

Products of Conception (POC) are tissues resulting from a pregnancy. These may include the embryo or fetus, placenta, fetal membranes and other pregnancy-related tissues. POC tissue may be submitted to the RCMP National Forensic Laboratory Services (NFLS) to support investigations involving sexual assault or incest. Recovering embryonic or fetal tissue from these samples may allow paternity testing to assess potential suspects. POC tissue begins to degrade soon after surgical removal. Proper storage and shipping are therefore critical to preserve the evidence and maximize the chances of obtaining a DNA profile.

STORAGE

- Whenever possible, **do not preserve the POC specimen in a fixative** (i.e. formalin or formaldehyde). Fixatives make it more difficult for the examiner to distinguish maternal tissue from embryonic tissue, particularly in early-stage pregnancies. Fixatives may also reduce DNA recovery, especially when the sample remains in the fixative for an extended period.
- Store unfixed POC samples at **4°C** (refrigerated).
- Do not keep unfixed POC samples at 4°C for extended periods. Refrigeration for more than **one week** can reduce tissue quality and DNA quantity and quality.
- If the unfixed POC sample cannot arrive at NFLS within **one week of the collection**, freeze it at **-20°C**.
- If the unfixed POC sample is frozen, store it in a freezer that will not undergo freeze-thaw cycles. Even one freeze-thaw cycle can significantly reduce the DNA quantity and quality.
- If the POC sample has been fixed in formalin or formaldehyde, store at 4°C.
- After DNA analysis is complete, NFLS will return the POC sample to the investigating agency on ice. For long-term storage, keep the sample at **-20°C**.

SHIPPING

- Ship the POC sample to NFLS as soon as possible after collection and after authorization has been received from FAC.
- Ship samples on **Monday, Tuesday or Wednesday** to reduce the risk of shipping delays over a weekend.
- **Ship the POC sample on ice via overnight courier and clearly label the outermost packaging as "Temperature Sensitive".**



NATIONAL POLICE SERVICES

FS&IS**FORENSIC SCIENCE AND
IDENTIFICATION SERVICES**

- If the sample is known to be fixed in formalin or formaldehyde, shipment is less urgent and overnight delivery is not required. If there is any uncertainty, follow the shipping instructions above.
- Provide the shipping tracking number to FAC as soon as it is available. This allows NFLS to monitor the shipment and prepare for its arrival.
- FAC will provide the shipping address. POC samples are typically processed at **NFLS-Ottawa**.

KNOWN SAMPLES

- **NFLS requests that a consent sample from the biological mother be submitted with the POC sample. This sample is required to determine the embryonic DNA profile.**
- Once an embryonic DNA profile has been developed, a known sample from the suspect will be required for comparison.
- If there is no suspect, and subject to technical suitability of the partial paternal DNA profile deduced from the embryo, a keyboard search (one time-search) against the National DNA Data Bank Convicted Offender Index (COI) may be requested to identify a possible suspect. If a COI hit is obtained, the investigating agency is responsible for assessing whether the individual is a viable suspect. Investigators must obtain a known sample from any viable suspect identified through the search.
- The paternal DNA profile is only partial because an embryo inherits approximately half of its DNA from the biological mother and the other half from the biological father. The known sample from the biological mother is required to identify the paternal contribution. The known sample from the biological father is required to calculate the statistical strength of any association.