



STK® Sperm Tracker STK Spray DIRECTION FOR USE


Symbol definition:

REF Catalogue reference: **AXO-STK-SP10**

LOT Batch number

 Recommended storage temperatures


 Do not use if packaging is damaged

 Keep away from light

 Single use

 Expiry date

 See User Guide

 AXO Science S.A.S.
36 Bis rue de Bruxelles
69100 Villeurbanne, France

Product purpose:

STK Spray from the STK® Sperm Tracker range is a presumptive test for the detection of human male semen.

STK Spray intend to be used indoor and outdoor, on floor, soil, hard surfaces like furniture, plastics, leather, metal, leaves, etc.

STK Spray must not be used on fabrics (clothes, beddings...).

For textile, we recommend instead to use STK Lab impregnated paper (Ref. AXO-STK-9240, AXO-STK-9210, AXO-STK-A3-20) to avoid contrast issue (false negative) when lighting with UV light.

STK Spray MUST NOT be sprayed directly on human skin.

Principle of the test:

STK spray is a vaporizable mixture that allows specific detection of male seminal fluid traces with the later objective of realizing DNA analysis of collected samples. **Reagents react specifically with Acid Phosphatase enzyme present in human seminal fluid.**

Presence of this enzyme on tested evidence react with STK Spray. Specific obtained stain can be visualized using a 365/366nm UV light with visible light filter.

STK Spray does not damage DNA. It does not alter potential DNA extraction and PCR amplification. STK Spray allows specific localization of the area where semen can be found on studied evidence.

Provided material:

Pouches of reagent powder. Each pouch must be dissolved in 100 ml (~3.5 US fl oz) of clean water (e.g demineralized)

Not provided necessary material:

- Demineralized water.
- Sprayer for dissolved solution (e.g.: Ref AXO-STK-PV1). Use a sprayer that allow fine mist and prevent large droplets of water.
- STK UV light and UV protection glasses (see UV lamp instructions). For any other UV light, please validate it beforehand.

It is advised to check light detection capabilities with samples beforehand and always use a positive control for each analysis (type: Ref AXO-STK-PC10). If in doubt about your UV light, contact AXO Science.

Protocol:

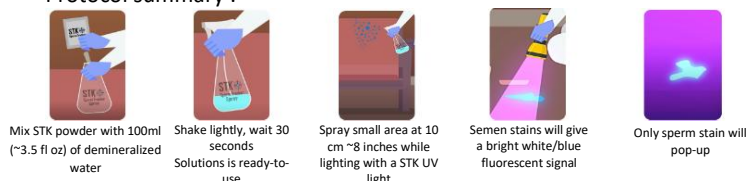
Beforehand: Personal Protective Equipment

It is advised to wear appropriate laboratory protective equipment (gloves, facemask, hygiene cap and lab coat) to prevent from contaminating the STK Spray solution. It is mandatory to wear UV-protective glasses when using UV light.

Modus operandi:

- Prepare the solution in the spray bottle:** dissolve content of one STK Spray pouch within 100ml of demineralized water. Wait 30 seconds for total reagent dissolution. If necessary, shake lightly.
- Put on UV protective glasses** and turn on the UV light.
- Use the spray bottle containing STK Spray solution:** in the dark, work in small areas (about 1m²): screen the area with the UV lamp to identify what reacts non-specifically to the UV light and then distinguish the signals generated by STK Spray, then, while keeping the UV lamp on at a distance of about 25 cm, spray the solution onto the search area. Spray lightly, vertically, facing you, at a distance of about 10 cm from the target, sweeping from side to side. Do not aim directly at the ground. Adjust the volume of solution sprayed according to the absorbency of the surface being screened. As a guide, 10 ml of solution per square meter on a non-absorbent surface is normal. Do not over-spray the target, as this does not improve detection and may dilute the target DNA.
- Wait a few moments:** as an indication and depending on the absorbency of the surface, between 45 seconds and 3 minutes.
- Note:** Absolute darkness is not required, but it greatly facilitates and improves the detection of sperm traces.

Protocol summary :



Results interpretation:

Once analysis is completed according to the above protocol:

- Presumptive test is **positive**: a blue fluorescent signal is detected with UV light
- Presumptive test is **negative**: no fluorescent signal is detected with UV light



Disposal:

No specific recommendations are required. Comply with local Waste Policy Management.

Compatibility:

STK Spray is fully compatible with other forensic solution such as SERATEC® AmylasePaper ou Phadebas Amylase Test (saliva) but also with BLUESTAR® forensic (blood). Always use STK Spray **before** BLUESTAR® forensic or luminol.

Sensitivity:

STK Spray allows to detect semen stains diluted to 1:100 and in optimal conditions to 1:1000 for traces revealed on non-absorbent and smooth surfaces.

Specificity:

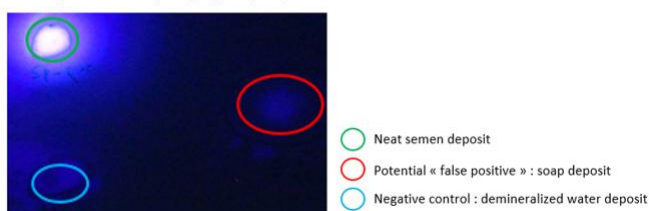
STK Spray is only specific to human male semen.

STK Spray will not show any positive results if it is applied on other body fluids such as saliva, blood or urine.

STK Spray allows the detection of old semen stains (several years) in normal storage conditions.

A signal close to a positive result can appear with the presence of residues of bleach, oxidizing agents, household detergents or moulds. These signals are weaker, less "blue" and appear much later than the recommended time (45 sec to 3 minutes maximum); they are easily recognizable from a positive result.

After STK Spray spraying



Additional analysis:

If in doubt about the presence of a signal on the evidence, it is recommended to carry out a confirmatory test.

After STK Spray use, the semen trace can be collected, after swabbing from the fabric then quantified and analyzed to determine the genetic profile.

Contraindications and advises:

The simultaneous use of the different products in the STK Sperm Tracker™ range is strongly discouraged as it may result in significant false negative. STK Spray and STK Lab (and vice versa) should not be used on the same evidence.

It is not recommended to use STK Spray on absorbent materials such as fibers or fabrics as it may result in false negative.

Using STK Spray on a garment runs a high risk of generating a false negative and, in addition, greatly reduces the chances of revealing the potential trace later with STK Lab paper.

Adding chemical or biological products not mentioned in the protocol may alter test effectiveness.

It is important to visualize the materials to be tested with the UV light before spraying STK Spray in order to compare the fluorescence before/after the use of this product.

The use of a positive control to correctly identify the semen signal is essential. The difference with a potential semen stain is clearly noticeable.

Storage and stability / Shelf life:

Keep away from light and heat. It is advised to store the product at a temperature +35°C (+95°F) and not exceed this temperature for a

long period. If storage conditions are not guaranteed, make sure product works normally by using a positive control.

Can be stored in the refrigerator.

Conservation before opening:

Expiry date is on product packaging. Do not use after this date.

Conservation after dissolution:

STK Spray can be used 30 seconds after dissolution, and must be used within 24 hours. Do not keep or reuse opened pouch.

Quality standards:

The STK Sperm Tracker™ products range are manufactured according to the European quality standards ISO 13485. Each batch release is preceded by a quality control (performances and hDNA free), STK Lab is therefore ISO 18385 certified.

Literature:

- Sophie Dessaux, Emmanuelle Briant-Gicquel, Myriam Siffointe, Laurent Bartholin, Claude Descorme, Emilie Borges. Evaluation of Sperm Tracker® Spray for Semen Stain Localization (2023)
- Sonoda A., Nagata A., Tomonari K., Ono T., Tomisaka Y., Nishi E.. Establishment of the new semen identification method and the examination to practical introduction. J-STAGE (2021). <https://doi.org/10.3408/jafst.824>
- T.Sijen, S.Harbison. On the Identification of Body Fluids and Tissues: A Crucial Link in the Investigation and Solution of Crime. Genes, 12(11), 1728. S (2021). <https://doi.org/10.3390/genes12111728>
- Utilising Crime-lites® for the visualisation of fluorescence from STK Sperm Tracker™, SEPTEMBER 2021. www.fosterfreeman.com

INFORMATION AND TECHNICAL SUPPORT

Email: support@axoscience.com

Phone number: +33 (0)4 78 93 08 26

Website: www.sperm-tracker.com

NOTICE

AXO Science shall not be held responsible for accidental or consequential damages related to, or arising from, improper use or understanding of the manual and instructions it contains.

INTELLECTUAL PROPERTY

STK® Sperm Tracker, AXO Science and logos are registered trademarks owned by AXO Science. The purchase of this product gives the buyer the non-transferable right to use the product. The buyer shall not sell or otherwise transfer this product to a third party or use this product for commercial purposes. The use of this product implies acceptance of AXO Science terms and conditions. This manual must not be copied or transmitted without AXO Science written express approval.

AXO Science S.A.S. – 36 Bis rue de Bruxelles – 69100 Villeurbanne
France

AXO Science Inc. - 1680 Michigan Ave, Suite 722 - Miami Beach, FL
33139 - USA