

# SAFETY DATA SHEET

## XenoScreen XL YES Kit

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Processing date December 2016

### 1. IDENTIFICATION OF THE TEST KIT AND THE COMPANY

#### Product information

Product Name: XenoScreen XL YES

Intended use: For research use only, not for diagnostic purposes

Company: Xenometrix AG  
Gewerbstrasse 25  
CH-4123 Allschwil, Switzerland  
Telephone: +41 61 482 14 34 (during normal business hours)  
Telefax: +41 61 482 20 72

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### The following components contain no hazardous substances in concentrations to be declared:

- Basal Medium
- 10X DO Medium
- 10X SD Medium
- Vitamin Solution
- L-aspartic acid solution
- Threonine solution
- Cu(II) solution
- lacZ lysis buffer
- CPRG solution

#### The following components pose no significant hazard because of form (solution):

- Lyticase solution (CAS-No. 37340-57-1)

#### The hazards of the following kit components are listed below:

- E2 = 17 $\beta$ -Estradiol, CAS-No. 50-28-2
- 4-HT = 4-Hydroxytamoxifen, CAS-No. 68047-06-3
- *Saccharomyces cerevisiae* BJ1991 (YES strain).
- 2-mercaptoethanol (CAS-No. 60-24-2)
- DMSO (CAS.No. 67-68-5)
- Streptomycin/Ampicillin solution: Ingredients: Streptomycin (CAS-No. 3810-74-0); Ampicillin (CAS-No. 69-52-3)

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### 3. HAZARDS IDENTIFICATION

#### E2 = 17 $\beta$ -Estradiol, CAS-No. 50-28-2



Signal word Danger

Carcinogenicity (Category 2). Reproductive toxicity (Category 1A). Effects on or via lactation  
May impair fertility. Limited evidence of a carcinogenic effect. Possible risk of harm to the unborn child.  
May cause harm to breastfed babies.

#### **Hazard statement(s)**

H351 Suspected of causing cancer.

H360 May damage fertility. Suspected of damaging the unborn child.

H362 May cause harm to breast-fed children.

#### **Precautionary statement(s)**

P201 Obtain special instructions before use.

P263 Avoid contact during pregnancy/ while nursing.

P281 Use personal protective equipment as required.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

#### **R-phrases(s)**

R60 May impair fertility.

R40 Limited evidence of a carcinogenic effect.

R63 Possible risk of harm to the unborn child.

R64 May cause harm to breastfed babies.

#### **S-phrases(s)**

S45 In case of accident or if you feel unwell, seek medical advice immediately

S53 Avoid exposure - obtain special instructions before use.

#### 4-HT = 4-Hydroxytamoxifen, CAS-No. 68047-06-3



Signal word Warning

Acute toxicity, Inhalation (Category 4)

Acute toxicity, Dermal (Category 4)

Acute toxicity, Oral (Category 4)

Reproductive toxicity (Category 2)

Harmful by inhalation, in contact with skin and if swallowed. Possible risk of harm to the unborn child.

#### **Hazard statement(s)**

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H302 Harmful if swallowed.  
H312 Harmful in contact with skin.  
H332 Harmful if inhaled.  
H361 Suspected of damaging fertility or the unborn child.

### Precautionary statement(s)

P280 Wear protective gloves/ protective clothing.

### R-phrases(s)

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
R63 Possible risk of harm to the unborn child.

### S-phrases(s)

S23 Do not breathe spray, vapor.  
S36 Wear suitable protective clothing.  
S22 Do not breathe dust.

**Caution - substance not yet tested completely.**

### Saccharomyces cerevisiae BJ1991 (YES and YAS strains)

Risk of exchange of genetic material in the case of accidental release

### 2-mercaptoethanol



Signal word Danger

Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 3), H331  
Acute toxicity, Dermal (Category 2), H310  
Skin irritation (Category 2), H315  
Serious eye damage (Category 1), H318  
Skin sensitization (Category 1), H317  
Specific target organ toxicity - repeated exposure, Oral (Category 2), Liver, Heart, H373  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (Category 1), H410

### Hazard statement(s)

H301 + H331 Toxic if swallowed or if inhaled  
H310 Fatal in contact with skin.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H373 May cause damage to organs (Liver, Heart) through prolonged or repeated exposure if swallowed.  
H410 Very toxic to aquatic life with long lasting effects.

### Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

P302 + P352 + P310 IF ON SKIN: Wash with plenty of water. Immediately call a POISON CENTER or doctor/physician.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

#### Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. Stench.

Stench., Rapidly absorbed through skin.

#### DMSO

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

This substance is not classified as dangerous according to Directive 67/548/EEC.

#### Streptomycin/Ampicillin solution

Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.



Signal word Danger

#### **Hazard statement(s)**

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### **Precautionary statement(s)**

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P280 Wear protective gloves.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

#### **R-phrases(s)**

R42/43 May cause sensitization by inhalation and skin contact.

#### **S-phrases(s)**

S23 Do not breathe vapor.

S36/37 Wear suitable protective clothing and gloves.

S45 In case of accident or if you feel unwell, seek medical advice immediately

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### 4. FIRST AID MEASURES

#### E2, 4-HT

General advice: Exposure to hormones during pregnancy may cause adverse effects to the fetus. Consult a physician. Show this safety data sheet to the doctor in attendance.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Skin contact: Wash off with soap and plenty of water. Consult a physician.

Eye contact: Flush eyes with water as a precaution.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### Saccharomyces cerevisiae BJ1991 (YES and YAS strains)

Skin contact: Wash off with soap and plenty of water. Apply a disinfecting solution e.g. 70% ethanol

Eye contact: Flush eyes extensively with 0.9% saline solution.

Ingestion: Do NOT induce vomiting. Drink water. Yeast will be destroyed by gastric juices.

Inhalation: Consult a physician.

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

#### 2-mercaptoethanol

Skin contact: Wash off with soap and plenty of water. Consult a physician.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

#### DMSO

Skin contact: Wash off with soap and plenty of water. Consult a physician.

Eye contact: Flush eyes extensively with 0.9% saline solution.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

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### **Streptomycin/Ampicillin solution**

Skin contact: Wash skin immediately with plenty of water.  
Eye contact: Rinse immediately with plenty of water and seek medical advice.  
Ingestion: Wash out mouth with water and seek medical advice.  
Inhalation: Remove to fresh air. If breathing becomes difficult, seek medical advice.  
Instructions for physician: Symptomatic treatment by a physician.

## 5. FIRE-FIGHTING MEASURES

### **E2, 4-HT**

Suitable extinguishing media  
Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  
Special risks: Carbon oxides, nitrogen oxides (NO<sub>x</sub>), Carbon oxides, nitrogen oxides (NO<sub>x</sub>), Hydrogen fluoride

### **Saccharomyces cerevisiae BJ1991 (YES and YAS strains)**

No special risk

### **2-mercaptoethanol**

Flash point: 74°C (165°F)  
Combustible Liquid and Vapor  
Flammable limits in air % by volume: lel: 2.3; uel: 18  
Explosion: Above flash point, vapor-air mixtures are explosive within flammable limits noted above.  
Water spray, dry chemical, alcohol foam, or carbon dioxide. Water may be ineffective.

### **DMSO**

Extinguishing media: water spray, carbon dioxide, dry chemical powder or appropriate foam.  
Special risks: Carbon oxides, Sulphur oxides

### **Streptomycin/Ampicillin solution**

Not flammable as solution.  
Special risks: Emits toxic fumes under fire conditions.

## 6. ACCIDENTAL RELEASE MEASURES

### **E2, 4-HT**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.  
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.  
For disposal see section 13

### **Saccharomyces cerevisiae BJ1991 (YES and YAS strains)**

Personal precautions: Avoid contact with skin or eyes, use personal protective equipment  
Environmental precautions

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*Saccharomyces cerevisiae* BJ1991 (YES and YAS strains) should not be release into environment  
Methods and materials for containment and cleaning up:  
Sweep up solutions with absorbent paper; materials which got in contact with yeast have to be inactivated with suitable methods (disinfect surfaces, autoclave waste)

### **2-mercaptoethanol**

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

### **DMSO**

Personal precautions, protective equipment and emergency procedures  
Avoid breathing vapours, mist or gas. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.  
For personal protection see section 8.  
Environmental precautions  
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.  
Methods and materials for containment and cleaning up  
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.  
Reference to other sections: For disposal see section 13.

### **Streptomycin/Ampicillin solution**

Smaller quantities can be washed off with plenty of water. Absorbent material: No restriction.

## **7. HANDLING AND STORAGE**

### **E2, 4-HT**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.  
Recommended storage temperature: -20 °C

### **Saccharomyces cerevisiae BJ1991 (YES and YAS strains)**

Store at 4°C for up to 1 month. Store at -20°C for longer periods up to expiry date indicated on vial.

### **2-mercaptoethanol**

Protect against physical damage.  
Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.  
Store at 4°C

### **DMSO**

Avoid inhalation of vapor or mist.  
Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge. Store in the dark at RT.

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### Streptomycin/Ampicillin solution

Avoid inhalation, avoid contacts with eyes, skin and clothing. Avoid prolonged or repeated exposure.  
Storage: -20°C

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### E2, 4-HT

Respiratory protection: Not required.  
Eye protection: Safety glasses  
Hand protection: Protective gloves  
Hygiene measures: Wash hands before breaks and at the end of workday.

#### Saccharomyces cerevisiae BJ1991 (YES and YAS strains)

Respiratory protection: Not required.  
Eye protection: Safety glasses  
Hand protection: Protective gloves  
Hygiene measures: Wash hands before breaks and at the end of workday.

#### 2-mercaptoethanol

Respiratory protection: Ensure adequate ventilation. Disagreeable odor!  
Eye protection: Use chemical safety goggles. Maintain eye wash fountain in work area.  
Hand protection: Protective gloves. Material: Nature latex/chloroprene. Minimum layer thickness: 0,6 mm. Break through time 30 min  
Hygiene measures: Wash hands before breaks and at the end of workday.

#### DMSO

Respiratory protection: Not required.  
Eye protection: Safety glasses  
Hand protection: Protective gloves  
Hygiene measures: Wash hands before breaks and at the end of workday.

### Streptomycin/Ampicillin solution

Respiratory protection: Not required.  
Eye protection: Safety glasses  
Hand protection: Protective gloves  
Hygiene measures: Wash hands before breaks and at the end of workday.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### All kit ingredients except E2, 4-HT, Saccharomyces cerevisiae

Form: liquid  
Miscibility with water: completely miscible

#### E2, 4-HT, Saccharomyces cerevisiae

Form: solid



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### 10. STABILITY AND REACTIVITY

#### All kit ingredients

Hazardous reactions: none under normal use  
Hazardous decomposition products: only in small concentrations

### 11. TOXICOLOGICAL INFORMATION

#### E2, 4-HT

Suspected human reproductive toxicant. Damage to fetus cannot be excluded.  
Known human reproductive toxicant Effects on or via lactation May damage fertility. Suspected of damaging the unborn child.

#### Saccharomyces cerevisiae BJ1991 (YES and YAS strains)

No data available

#### 2-mercaptoethanol

Oral rat LD50: 244 mg/Kg; Skin rabbit LD50: 150 mg/Kg; Irritation data: eye, rabbit: 2 mg Severe.  
May cause sensitization by skin contact.  
Experiments showed mutagenic effects in cultured bacterial cells  
Ingestion - May cause damage to organs through prolonged or repeated exposure. - Liver, Heart

#### DMSO

LD50 Oral - rat - 14.500 mg/kg  
LC50 Inhalation - rat - 4 h - 40250 ppm  
LD50 Dermal - rabbit - > 5.000 mg/kg

#### Streptomycin/Ampicillin solution

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.  
Ingestion: May be harmful if swallowed.  
Skin: May be harmful if absorbed through skin. May cause skin irritation.  
Eyes: May cause eye irritation.

### 12. ECOLOGICAL INFORMATION

#### E2

Toxicity to fish

#### 4-HT

No data available

#### Saccharomyces cerevisiae BJ1991 (YES and YAS strains)

No data available

#### 2-mercaptoethanol

Very toxic to aquatic life with long lasting effects:  
Toxicity to fish LC50 - Leuciscus idus (Golden orfe) - 46 - 100 mg/l - 96,0 h

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Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia - 0,89 mg/l - 48  
Toxicity to algae EC50 - Desmodesmus subspicatus (green algae) - 12 mg/l - 72 h  
Toxicity to bacteria LC50 - Bacteria - 125 mg/l - 17 h

### **DMSO**

Toxicity to fish: LC50 - Pimephales promelas (fathead minnow) - 34.000 mg/l - 96 h  
LC50 - Oncorhynchus mykiss (rainbow trout) - 35.000 mg/l - 96 h  
Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia pulex (Water flea) - 27.500 mg/l

### **Streptomycin/Ampicillin solution**

No data available

## **13. DISPOSAL CONSIDERATIONS**

### **E2, 4-HT**

Waste disposal route: Waste disposal, incineration. Do not release into the water.

Disposal of empty packaging: Same as product..

### **Saccharomyces cerevisiae (YES and YAS strains)**

Autoclave at 121°C for 20 min before disposal.

### **2-mercaptoethanol**

Waste disposal route: Waste disposal, incineration. The small, diluted quantities used in the kit may be disposed of in waste water.

Disposal of empty packaging: Dispose of empty packs via local recycling or waste disposal routes- if necessary, clean them beforehand.

### **DMSO**

Waste disposal route: Waste disposal, incineration. The small, diluted quantities used in the kit may be disposed of in waste water.

Disposal of empty packaging: Dispose of empty packs via local recycling or waste disposal routes- if necessary, clean them beforehand.

### **Streptomycin/Ampicillin solution**

Waste disposal route: Waste disposal, incineration. The small, diluted quantities used in the kit may be disposed of in waste water.

Disposal of empty packaging: Dispose of empty packs via local recycling or waste disposal routes- if necessary, clean them beforehand.

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### 14. TRANSPORT INFORMATION

Is not subject to current regulations for transportation of dangerous goods (ADR/RID, IMDG, IATA/ICAO)

### 15. REGULATORY INFORMATION

The product contains preparations and substances, which assigned to water hazard class 2 and 3. The product is set to water hazard class 3 – self rating. This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

### 16. OTHER INFORMATION

#### Reference

The information given in the safety datasheet for XenoScreen XL YES/YAS relate to safety information of the single components of the respective supplier. An assessment for test kit mixtures was obtained by means of an assessment of single substances in the mixture.

#### Further information

The information in this document for XenoScreen XL YES/YAS is based on the present state of our knowledge and is applicable to the product with regard to safety precautions and makes no claim to be complete. Xenometrix AG shall not be held liable for any damage resulting from handling or from contact with the product or the ingredients.