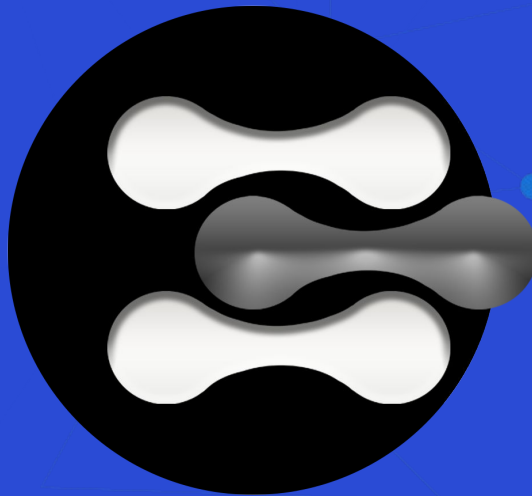




## SMART CONTRACT SECURITY AUDIT for



# Genolix DNA Innovation

# Token Overview

0xSafe received the application for a smart contract security audit of **Genolix DNA Innovation** on December 16, 2022.

## Details

**Client:** Genolix DNA Innovation [\$GENO]

**Blockchain:** Polygon

**Contract:** [0x23f5934C33F8781B7e0f27706d87a32b5071b96C](#)

**Compiler:** v0.8.15+commit.e14f2714

**Optimization:** Yes with 200 runs

# Table of Contents

<b>Token Overview</b>	<b>1</b>
Details	1
<b>Table of Contents</b>	<b>2</b>
<b>Methodology</b>	<b>3</b>
Audit Details	3
Code Quality	3
Scope of work	3
Tools	3
<b>Risk Classification</b>	<b>4</b>
<b>Audit Findings</b>	<b>4</b>
Critical Issues	4
Medium Issues	4
Minor Issues	4
<b>SWC Attacks</b>	<b>4</b>
<b>Important Notes</b>	<b>7</b>
<b>Good Practices</b>	<b>7</b>
<b>Inheritance Tree</b>	<b>8</b>
<b>Contract Inspection</b>	<b>8</b>
Legend	8
Table	8
<b>Audit Results</b>	<b>13</b>
<b>Disclaimer</b>	<b>14</b>

# Methodology

## Audit Details

This comprehensive audit report provides an overview of the **Genolix DNA Innovation** token smart contract. 0xSafe utilizes a combination of static, automated, and manual analysis tools to check for any potential vulnerabilities or hacks in the system.

## Code Quality

This includes a full review of the smart contract code. The prime areas of focus are

- Accuracy
- Exploits
- Functionality
- Readability
- Security
- Vulnerabilities

## Scope of work

**Genolix DNA Innovation's** team provided us with the files that need to be tested (BSCscan, Etherscan, Github, etc.). The focus of the security audit is the main token smart contract.

## Tools

Ganache, Mithril, MythX, Open Zeppelin Code Analyzer, Proprietary tests, Remix IDE, Solidity Compiler, SWC Registry.

## Risk Classification

<b>!Critical</b>	This signifies vulnerabilities with the smart contract's functionality or performance. Issues should be resolved immediately.
<b>!Medium</b>	This signifies vulnerabilities that can potentially cause problems and should eventually be fixed.
<b>!Minor</b>	Minor vulnerabilities may or may not impact smart contract functionality.
<b>!Informational</b>	This is there to offer suggestions for improvement

## Audit Findings

### Critical Issues

-no critical issues found-

### Medium Issues

-no medium issues found-

### Minor Issues

Issue	Type	Line #(s)	Description
#1	State variable visibility is not set.	642	It is best practice to set the visibility of state variables explicitly (possible visibility settings are internal, public, and private)

## SWC Attacks

SWC ID	Description	Status
SWC-100	Function Default Visibility	PASSED
SWC-101	Integer Overflow and Underflow	PASSED
SWC-102	Outdated Compiler Version	PASSED
SWC-103	Floating Pragma	PASSED
SWC-104	Unchecked Call Return Value	PASSED
SWC-105	Unprotected Ether Withdrawal	PASSED
SWC-106	Unprotected SELFDESTRUCT Instruction	PASSED
SWC-107	Reentrancy	PASSED
SWC-108	State Variable Default Visibility	MINOR
SWC-109	Uninitialized Storage Pointer	PASSED
SWC-110	Assert Violation	PASSED
SWC-111	Use of Deprecated Solidity Functions	PASSED
SWC-112	Delegatecall to Untrusted Callee	PASSED
SWC-113	DoS with Failed Call	PASSED
SWC-114	Transaction Order Dependence	PASSED
SWC-115	Authorization through tx.origin	PASSED
SWC-116	Block values as a proxy for time	PASSED
SWC-117	Signature Malleability	PASSED
SWC-118	Incorrect Constructor Name	PASSED
SWC-119	Shadowing State Variables	PASSED
SWC-120	Weak Sources of Randomness from Chain Attributes	PASSED
SWC-121	Missing Protection against Signature Replay Attacks	PASSED
SWC-122	Lack of Proper Signature Verification	PASSED
SWC-123	Requirement Violation	PASSED

<b>SWC-124</b>	Write to Arbitrary Storage Location	<b>PASSED</b>
<b>SWC-125</b>	Incorrect Inheritance Order	<b>PASSED</b>
<b>SWC-126</b>	Insufficient Gas Griefing	<b>PASSED</b>
<b>SWC-127</b>	Arbitrary Jump with Function Type Variable	<b>PASSED</b>
<b>SWC-128</b>	DoS With Block Gas Limit	<b>PASSED</b>
<b>SWC-129</b>	Typographical Error	<b>PASSED</b>
<b>SWC-130</b>	Right-To-Left-Override control character (U+202E)	<b>PASSED</b>
<b>SWC-131</b>	Presence of unused variables	<b>PASSED</b>
<b>SWC-132</b>	Unexpected Ether balance	<b>PASSED</b>
<b>SWC-133</b>	Hash Collisions With Multiple Variable Length Arguments	<b>PASSED</b>
<b>SWC-134</b>	Message call with hardcoded gas amount	<b>PASSED</b>
<b>SWC-135</b>	Code With No Effects	<b>PASSED</b>
<b>SWC-136</b>	Unencrypted Private Data On-Chain	<b>PASSED</b>

## Important Notes

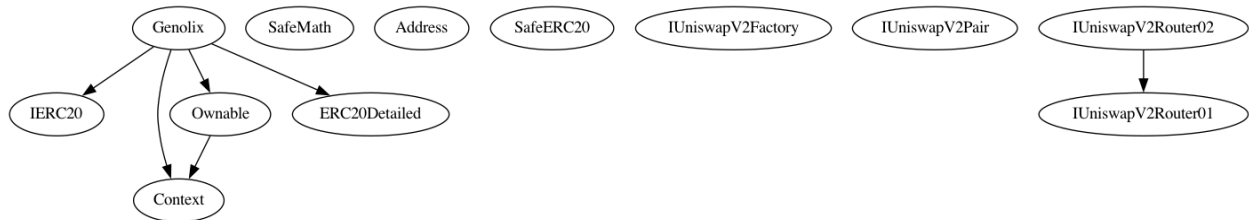
- Owner can change max wallet balance
- Owner can change trade limit
- Owner can exclude/include from trade limit
- Owner can add/remove bots from bot list

## Good Practices

- Owner cannot mint new tokens after initial deployment
- Owner cannot set fees higher than 20%
- The smart contract utilizes “SafeMath” to prevent overflows
- Owner cannot disable trading






## Inheritance Tree








## Contract Inspection

Below is a visual description report comprising of information about the system's files, contracts, and their functions.






















































### Legend

Symbol	Meaning
:-----:   :-----:	
	Function can modify state
	Function is payable
	Internal function
NO !	Function has no modifier

### Table

Contract	Type	Bases			
:-----:   :-----:   :-----:   :-----:   :-----:					
L	**Function Name**	**Visibility**	**Mutability**	**Modifiers**	
**IERC20**	Interface				
L	totalSupply	External !	NO !		
L	balanceOf	External !	NO !		
L	transfer	External ! 	NO !		
L	allowance	External !	NO !		
L	approve	External ! 	NO !		
L	transferFrom	External ! 	NO !		
**SafeMath**	Library				
L	add	Internal 			
L	sub	Internal 			
L	sub	Internal 			

```

|  | mul | Internal  |  | |
|  | div | Internal  |  |
|  | div | Internal  |  |
|||||
| **Context** | Implementation |  |
|  | <Constructor> | Public  |  | NO  |
|  | _msgSender | Internal  |  |
|||||
| **Ownable** | Implementation | Context |
|  | <Constructor> | Public  |  | NO  |
|  | owner | Public  |  | NO  |
|  | renounceOwnership | Public  |  | onlyOwner |
|  | transferOwnership | Public  |  | onlyOwner |
|||||
| **ERC20Detailed** | Implementation |  |
|  | <Constructor> | Public  |  | NO  |
|  | name | Public  |  | NO  |
|  | symbol | Public  |  | NO  |
|  | decimals | Public  |  | NO  |
|||||
| **Address** | Library |  |
|  | isContract | Internal  |  |
|||||
| **SafeERC20** | Library |  |
|  | safeTransfer | Internal  |  |
|  | safeTransferFrom | Internal  |  |
|  | safeApprove | Internal  |  |
|  | callOptionalReturn | Private  |  |
|||||
| **IUniswapV2Factory** | Interface |  |
|  | feeTo | External  |  | NO  |
|  | feeToSetter | External  |  | NO  |
|  | getPair | External  |  | NO  |
|  | allPairs | External  |  | NO  |
|  | allPairsLength | External  |  | NO  |
|  | createPair | External  |  | NO  |
|  | setFeeTo | External  |  | NO  |
|  | setFeeToSetter | External  |  | NO  |
|||||
| **IUniswapV2Pair** | Interface |  |

```

```

| | name | External ! | | NO ! | |
| | symbol | External ! | | NO ! |
| | decimals | External ! | | NO ! |
| | totalSupply | External ! | | NO ! |
| | balanceOf | External ! | | NO ! |
| | allowance | External ! | | NO ! |
| | approve | External ! | ● NO ! |
| | transfer | External ! | ● NO ! |
| | transferFrom | External ! | ● NO ! |
| | DOMAIN_SEPARATOR | External ! | | NO ! |
| | PERMIT_TYPEHASH | External ! | | NO ! |
| | nonces | External ! | | NO ! |
| | permit | External ! | ● NO ! |
| | MINIMUM_LIQUIDITY | External ! | | NO ! |
| | factory | External ! | | NO ! |
| | token0 | External ! | | NO ! |
| | token1 | External ! | | NO ! |
| | getReserves | External ! | | NO ! |
| | price0CumulativeLast | External ! | | NO ! |
| | price1CumulativeLast | External ! | | NO ! |
| | kLast | External ! | | NO ! |
| | mint | External ! | ● NO ! |
| | staking | External ! | ● NO ! |
| | swap | External ! | ● NO ! |
| | skim | External ! | ● NO ! |
| | sync | External ! | ● NO ! |
| | initialize | External ! | ● NO ! |
|||||
| **|UniswapV2Router01** | Interface | |||
| | factory | External ! | | NO ! |
| | WETH | External ! | | NO ! |
| | addLiquidity | External ! | ● NO ! |
| | addLiquidityETH | External ! | 💵 NO ! |
| | removeLiquidity | External ! | ● NO ! |
| | removeLiquidityETH | External ! | ● NO ! |
| | removeLiquidityWithPermit | External ! | ● NO ! |
| | removeLiquidityETHWithPermit | External ! | ● NO ! |
| | swapExactTokensForTokens | External ! | ● NO ! |
| | swapTokensForExactTokens | External ! | ● NO ! |
| | swapExactETHForTokens | External ! | 💵 NO ! |

```

```

|  | swapTokensForExactETH | External | ! |  | NO | ! |
|  | swapExactTokensForETH | External | ! |  | NO | ! |
|  | swapETHForExactTokens | External | ! |  | NO | ! |
|  | quote | External | ! | | NO | ! |
|  | getAmountOut | External | ! | | NO | ! |
|  | getAmountIn | External | ! | | NO | ! |
|  | getAmountsOut | External | ! | | NO | ! |
|  | getAmountsIn | External | ! | | NO | ! |
|||||
| **IUniswapV2Router02** | Interface | IUniswapV2Router01 |||
|  | removeLiquidityETHSupportingFeeOnTransferTokens | External | ! |  | NO | ! |
|  | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External | ! | 
| NO | ! |
|  | swapExactTokensForTokensSupportingFeeOnTransferTokens | External | ! | 
| NO | ! |
|  | swapExactETHForTokensSupportingFeeOnTransferTokens | External | ! | 
| NO | ! |
|  | swapExactTokensForETHSupportingFeeOnTransferTokens | External | ! | 
| NO | ! | | | | | |
|||||
| **Genolix** | Implementation | Context, Ownable, IERC20, ERC20Detailed |||
|  | <Constructor> | Public | ! |  | ERC20Detailed |
|  | enableTrading | External | ! |  | onlyOwner |
|  | enableLimits | External | ! |  | onlyOwner |
|  | setMaxTradeLimit | External | ! |  | onlyOwner |
|  | setMaxWalletBalance | External | ! |  | onlyOwner |
|  | excludedFromTradeLimit | Public | ! |  | onlyOwner |
|  | getIsExcludedFromTradeLimit | Public | ! | | NO | ! |
|  | addBotToList | External | ! |  | onlyOwner |
|  | removeBotFromList | External | ! |  | onlyOwner |
|  | setAntiBotBuyCoolDown | External | ! |  | onlyOwner |
|  | setAntiBotSellCoolDown | External | ! |  | onlyOwner |
|  | totalSupply | Public | ! | | NO | ! |
|  | balanceOf | Public | ! | | NO | ! |
|  | transfer | Public | ! |  | NO | ! |
|  | allowance | Public | ! | | NO | ! |
|  | approve | Public | ! |  | NO | ! |
|  | transferFrom | Public | ! |  | NO | ! |
|  | increaseAllowance | Public | ! |  | NO | ! |
|  | decreaseAllowance | Public | ! |  | NO | ! |

```

L	setMarketingAddress	External !	🔴	onlyOwner	
L	setStakingAddress	External !	🔴	onlyOwner	
L	setSwapAndLiquifyEnabled	Public !	🔴	onlyOwner	
L	changeNumTokensSellToAddToLiquidity	External !	🔴	onlyOwner	
L	<Receive Ether>	External !	💰	NO !	
L	\_transfer	Internal 🔒	🔴		
L	setSellFee	Public !	🔴	onlyOwner	
L	setBuyFee	Public !	🔴	onlyOwner	
L	swapAndLiquify	Private 🔒	🔴	lockTheSwap	
L	addLiquidity	Private 🔒	🔴		
L	swapTokensForEth	Private 🔒	🔴		
L	\_approve	Internal 🔒	🔴		
L	withdrawStuckETH	External !	🔴	onlyOwner	
L	removeStuckToken	External !	🔴	onlyOwner	
L	setAutomatedMarketMakerPair	Public !	🔴	onlyOwner	

## Audit Results

**Genolix DNA Innovation** does not contain any severe issues or risks. The security of the smart contract was tested by 0xSafe using static, automated, and manual analysis. The



**AUDIT PASSED**

**Note:**

Please check the disclaimer below and note the audit makes no statements or warranties on the business model, investment attractiveness, or code sustainability of this project. The security audit report is provided for the only contract mentioned in this report.

## Disclaimer

0xSafe.io provides contract auditing, KYC, development, and launch services for blockchain projects. The purpose of the security audit is to analyze the on-chain smart contract source code and to provide an easy-to-understand assessment of the crypto project and the smart contract. **0xSafe.io provides information as is.**

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