

## RugFreeCoins Audit



Rainbow Farm Token
Smart Contract Security Audit
November 01, 2021

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### **Audit details**



### **Audited project**

Rainbow farm Token

#### **Contract Address**

**RNBO MC:** 

0xf0a0E6Cc29Fd225E7ED8C4D983f1Bb0d874BB812



#### RNBZ:

0xE3db2FA2900072e4eE2215f5c25e603de0f8FdB9

#### **RNBZ MC**:

0xDE6b77E0Ae277805135B4372c4A8Acc9A07ae0A2



#### **Client contact**

Rainbow farm Team



#### **Blockchain**

Binance smart chain



### **Project website**

https://rainbowfarm.finance/

### **Disclaimer**

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the disclaimer below – please make sure to read it in full.

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## **Background**

Rugfreecoins was commissioned by Rainbow Farm Token to perform an audit of the smart contract.

### https://bscscan.com/address/0xf0a0E6Cc29Fd225E7ED8C4D983f1Bb0d874BB812

The focus of this audit is to verify that the smart contract is secure, resilient and working according to the specifications.

The information in this report should be used to understand the risk exposure of the smart contract, project feasibility, long term sustainability and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

## **About the project**

Rainbow Farm is a farming token built on the Binance Smart Chain.

The project has an existing token called RNBO and investors will stake RNBO token and LP to earn RMBZ that is through RNBZ MC. There is no other way to earn RNBZ and liquidity will be added after 15 days for RNBZ so the only way to get RNBZ would be through RNBO. In normal MC people can stake only if they hold RNBZ and stake it. There will be a minimum of 1000 RNBZ required to enter normal pools and farms.

They have an APR boost system that depends on how long people stay in without withdrawal and harvesting. After 1st week each day adds 1% of boost and the highest boost is 100%. Similarly, withdrawal fees post 45 days are half of the actual fees, and after 90 days no withdrawal fees. In the first week after depositing there will be a 10% penalty on the harvest.

On withdrawal, users need to have minimum required RNBZ then there will be 10% fees also while withdrawing RNBZ if the user is staking in any other pool or farm then they can withdraw all except the minimum required to stay in other farms and pools.

# Potential to grow with score points

1.	Project efficiency	8/10
2.	Project uniqueness	9/10
3	Information quality	6/10
4	Service quality	8/10
5	System quality	8/10
6	Impact on the community	9/10
7	Impact on the business	9/10
8 Preparing for the future		8/10
Total	8.125/10	

### **Contract details**

### Token contract details for 01st November 2021

Contract name	RNBOExclusiveMC
Contract address	0xf0a0E6Cc29Fd225E7ED8C4D983f1Bb0d874BB812
Dev & marketing wallet	0xdbc22cdd2717bc6fd3faa3c7956cf1154222e942
Fee address	0xec50cd98a33542ffb5d1182a55c49402769ba983
Contract deployer address	0xa25A93F5029e14b8a26b871f353Fc9d0762C04Ca
Contract's current owner address	0x1f4f94db73b235287661583456381b8ff80d9460

## **Contract code function details**

No	Category	Item	Result
		BRC20 Token standards	pass
		compile errors	pass
		Compiler version security	pass
		visibility specifiers	pass
		Gas consumption	low issue
1	Coding conventions	SafeMath features	pass
		Fallback usage	pass
		tx.origin usage	pass
		deprecated items	pass
		Redundant code	pass
		Overriding variables	pass
		Authorization of function call	pass
2	Function call audit	Low level function (call/delegate call) security	pass
		Returned value security	pass
		Selfdestruct function security	pass
		Access control of owners	pass
3	Business security	Business logics	pass
		Business implementations	pass
4	Integer overflow/underflow		pass
5	Reentrancy		pass
6	Exceptional reachable state		pass
7	Transaction ordering dependence		pass
8	Block properties dependence		pass
9	Pseudo random number generator (PRNG)		pass
10	DoS (Denial of Service)		pass
11	Token vesting implementation		pass
12	Fake deposit		pass
13	Event security		pass

## **Contract description table**

Below table represents the summary of the contracts and methods in the token contract. We scanned the whole contract and listed down all the Interfaces, functions and implementations with its visibility and mutability.

#### **RNBOExclusiveMC**

Contract	Туре	Bases		
L	Function Name	Visibility	Mutability	Modifiers
ReentrancyGuard	Implementation			
L		Public 🎚		ио[]
Address	Library			
L	isContract	Internal 🖺		
L	sendValue	Internal 🖺		
L	functionCall	Internal 🖺		
L	functionCall	Internal 🖺		
L	functionCallWithV alue	Internal 🖺		
L	functionCallWithV alue	Internal 🖺		
L	_functionCallWith Value	Private 🖺		
IERC20	Interface			

L	totalSupply	External [	NOÏ
L	balanceOf	External [	NOÏ
L	transfer	External 🏻	NOÏ
L	allowance	External 🌡	NOÎ
L	approve	External [	NOÏ
L	transferFrom	External 🌡	NO
SafeMath	Library		
L	add	Internal 🖺	
L	sub	Internal 🖺	
L	sub	Internal 🖺	
L	mul	Internal 🖺	
L	div	Internal 🖺	
L	div	Internal 🖺	
L	mod	Internal 🖺	
L	mod	Internal 🖺	
SafeERC20	Library		
L	safeTransfer	Internal 🖺	

L	safeTransferFrom	Internal 🖺	
L	safeApprove	Internal 🖺	
L	safeIncreaseAllow ance	Internal 🖺	
L	safeDecreaseAllo wance	Internal 🖺	
L	_callOptionalRetur n	Private 🖺	
Context	Implementation		
L	_msgSender	Internal 🖺	
L	_msgData	Internal 🖺	
Ownable	Implementation	Context	
L		Internal 🖺	
L	owner	Public [	NO
L	renounceOwnershi p	Public [	onlyOwner
L	transferOwnership	Public [	onlyOwner
Roles	Library		
L	add	Internal 🖺	
L	remove	Internal 🖺	
L	has	Internal 🖺	

	T		T	
MinterRole	Implementation	Context		
L		Public [		ио[
L	isMinter	Public [		NO
L	addMinter	Public [		onlyMinter
L	renounceMinter	Public [		NO
L	_addMinter	Internal 🖺		
L	_removeMinter	Internal 🖺		
	· 		· 	
RNBZ	Implementation	Context, IERC20, Ownable, MinterRole		
L		Public [		ио[]
L	mint	Public [		onlyMinter
L	burn	Public [		NO
L	name	Public [		NO
L	symbol	Public [		NO
L	decimals	Public [		ио[
L	totalSupply	Public [		МОЇ
L	balanceOf	Public [		МОЇ

L	transfer	Public [		NO[
L	allowance	Public [		NOÎ
L	approve	Public [		NO
L	transferFrom	Public 🎚		NO
L	increaseAllowance	Public [		NOÏ
L	decreaseAllowanc e	Public [		NOÏ
L	_approve	Private 🖺		
L	_transfer	Private 🖺		
L	_getCurrentSupply	Private 🖺		
L	safe32	Internal 🖺		
L	getChainId	Internal 🖺		
RainbowToken	Implementation	Context, IERC20, Ownable, MinterRole		
L		Public [	•	NOÎ
L	mint	Public [		onlyMinter
L	burn	Public [		NOÏ
L	name	Public [		NOÏ
L	symbol	Public 🎚		NOÏ

L	decimals	Public 🎚	NO[
L	totalSupply	Public [	МОЇ
L	balanceOf	Public [	МО[
L	transfer	Public [	ио[
L	allowance	Public [	МОЇ
L	approve	Public [	МОЇ
L	transferFrom	Public [	ио[
L	increaseAllowance	Public [	ио[]
L	decreaseAllowanc e	Public [	ио[]
L	isExcluded	Public [	ио[]
L	excludeAccount	External [	onlyOwner
L	includeAccount	External 🎚	onlyOwner
L	_approve	Private 🖺	
L	_transfer	Private 🖺	
L	_getCurrentSupply	Private 🖺	
L	delegates	External [	ио[
L	delegate	External 🎚	NOÎ
L	delegateBySig	External 🎚	NOÏ

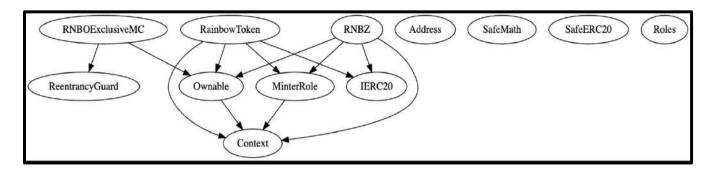
L	getCurrentVotes	External 🌡	NO
L	getPriorVotes	External [	NOÏ
L	_delegate	Internal 🖺	
L	_moveDelegates	Internal 🖺	
L	_writeCheckpoint	Internal 🖺	
L	safe32	Internal 🖺	
L	getChainId	Internal 🖺	
RNBOExclusiveMC	Implementation	Ownable, ReentrancyGuard	
L		Public [	NOÏ
L	poolLength	External [	NO
L	setMaxWithdrawF ee	Public [	onlyOwner
L	setMinRNBZHoldi ng	Public [	onlyOwner
L	add	External [	onlyOwner nonDuplicated
L	set	External 🌡	onlyOwner
L	getMultiplier	Public [	NOÎ
L	pendingRNBO	External [	NOÎ
L	hasBalanceStaked	Internal 🖺	

L	massUpdatePools	Public [	МОЇ
L	updatePool	Public [	NOÏ
L	deposit	Public [	nonReentrant
L	getActualWithdraw FeeRate	Public [	МОЇ
L	getBoostRewardR ate	Public [	NOÏ
L	withdraw	Public [	nonReentrant
L	emergencyWithdra w	Public [	nonReentrant
L	safeRNBOTransfe r	Internal 🖺	
L	setDevAddress	External [	onlyOwner
L	setFeeAddress	External [	onlyOwner
L	updateEmissionRa te	External [	onlyOwner
L	updateStartBlock	External [	onlyOwner

### Legend

Symbol	Meaning
	Function can modify state
Ø.P.	Function is payable

### **Inheritance Hierarchy**



#### **RNBZ TOKEN**

Contract	Туре	Bases		
L	Function Name	Visibility	Mutability	Modifiers
IERC20	Interface			
L	totalSupply	External [		№
L	balanceOf	External [		ио[]
L	transfer	External [		NO[
L	allowance	External [		№
L	approve	External [		NO[
L	transferFrom	External [		ио[
Address	Library			
L	isContract	Internal 🖺		
L	sendValue	Internal 🖺		

L	functionCall	Internal 🖺	
L	functionCall	Internal 🖺	
L	functionCallWithVal ue	Internal 🖺	
L	functionCallWithVal ue	Internal 🖺	
L	_functionCallWithV alue	Private 🖺	
SafeMath	Library		
L	add	Internal 🖺	
L	sub	Internal 🖺	
L	sub	Internal 🖺	
L	mul	Internal 🖺	
L	div	Internal 🖺	
L	div	Internal 🖺	
L	mod	Internal 🖺	
L	mod	Internal 🖺	
Context	Implementation		
L	_msgSender	Internal 🖺	
L	_msgData	Internal 🖺	

Ownable	Implementation	Context	
L		Internal 🖺	
L	owner	Public [	МОД
L	renounceOwnershi p	Public [	onlyOwner
L	transferOwnership	Public [	onlyOwner
Roles	Library		
L	add	Internal 🖺	
L	remove	Internal 🖺	
L	has	Internal 🖺	
MinterRole	Implementation	Context	
L		Public [	NO
L	isMinter	Public [	NO
L	addMinter	Public [	onlyMinter
L	renounceMinter	Public [	NO[
L	_addMinter	Internal 🖺	
L	_removeMinter	Internal 🖺	

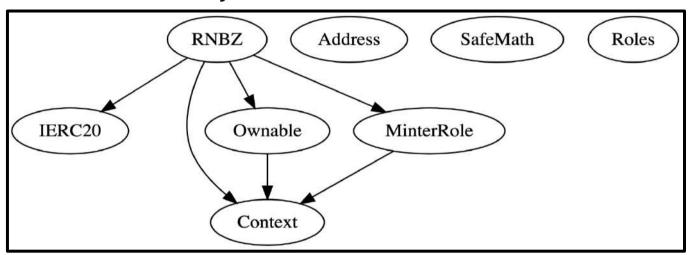
RNBZ	Implementation	Context, IERC20, Ownable, MinterRole	
L		Public [	МОД
L	mint	Public 🎚	onlyMinter
L	burn	Public [	NO
L	name	Public 🎚	МО[
L	symbol	Public 🎚	МО[
L	decimals	Public [	МОД
L	totalSupply	Public 🎚	МО[
L	balanceOf	Public 🎚	МО[
L	transfer	Public 🎚	МО[
L	allowance	Public [	МОД
L	approve	Public 🎚	МО[
L	transferFrom	Public [	NOÏ
L	increaseAllowance	Public [	NOÏ
L	decreaseAllowance	Public [	№
L	_approve	Private 🖺	
L	_transfer	Private 🖺	
L	_getCurrentSupply	Private 🖺	
L	safe32	Internal A	

L getChainId Internal 🖺	
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### Legend

Symbol	Meaning
	Function can modify state
gp.	Function is payable

### **Inheritance Hierarchy**



### RNBZ\_MasterChef

Contract	Туре	Bases		
L	Function Name	Visibility	Mutability	Modifiers
ReentrancyGuard	Implementation			
L		Public [		МО[
Address	Library			
L	isContract	Internal 🖺		

L	sendValue	Internal 🖺	
L	functionCall	Internal 🖺	
L	functionCall	Internal 🖺	
L	functionCallWithV alue	Internal 🖺	
L	functionCallWithV alue	Internal 🖺	
L	_functionCallWith Value	Private 🖺	
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 🖺	

Ownable	Implementation	Context	
L	_msgData	Internal 🖺	
L	_msgSender	Internal 🖺	
Context	Implementation		
L	_callOptionalRetur	Private 🖺	
L	safeDecreaseAllo wance	Internal 🖺	
L	safeIncreaseAllow ance	Internal 🖺	
L	safeApprove	Internal 🖺	
L	safeTransferFrom	Internal 🖺	
L	safeTransfer	Internal 🖺	
SafeERC20	Library		
L	mod	Internal 🖺	
L	mod	Internal 🖺	
L	div	Internal 🖺	
L	div	Internal 🖺	
L	mul	Internal 🖺	

L		Internal 🖺		
L	owner	Public [		NO[
L	renounceOwnershi p	Public [		onlyOwner
L	transferOwnership	Public [		onlyOwner
Roles	Library			
L	add	Internal 🖺		
L	remove	Internal 🖺		
L	has	Internal 🖺		
MinterRole	Implementation	Context		
L		Public 🎚		NO[
L	isMinter	Public 🎚		NO[
L	addMinter	Public [		onlyMinter
L	renounceMinter	Public 🎚		NO[
L	renounceMinter _addMinter	Public [	•	NOI
				NOI
L	_addMinter	Internal 🖺		NOI

L		Public [	NO
L	mint	Public [	onlyMinter
L	burn	Public [	МО[
L	name	Public [	МО[
L	symbol	Public [	NO[
L	decimals	Public [	по[
L	totalSupply	Public [	по[
L	balanceOf	Public [	NO[
L	transfer	Public [	NO[
L	allowance	Public [	МО[
L	approve	Public [	МО[
L	transferFrom	Public [	МО[
L	increaseAllowance	Public [	ПОП
L	decreaseAllowanc e	Public [	МО[
L	_approve	Private 🖺	
L	_transfer	Private 🖺	
L	_getCurrentSupply	Private 🖺	
L	safe32	Internal 🖺	

L	getChainId	Internal 🖺		
RainbowToken	Implementation	Context, IERC20, Ownable, MinterRole		
L		Public 🎚		NO
L	mint	Public [		onlyMinter
L	burn	Public [		NO
L	name	Public [		NO
L	symbol	Public [		NO
L	decimals	Public [		NOÏ
L	totalSupply	Public [		NO
L	balanceOf	Public [		NO
L	transfer	Public [		NO
L	allowance	Public [		NO
L	approve	Public [		NOÏ
L	transferFrom	Public [		NO
L	increaseAllowance	Public [		NO
L	decreaseAllowanc e	Public [		NO
L	isExcluded	Public 🎚		NO

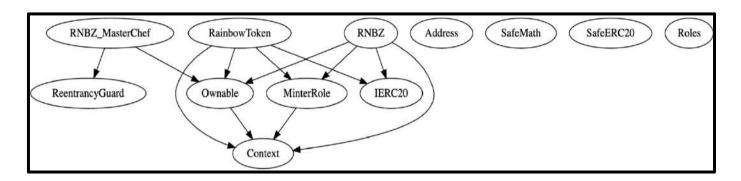
L	excludeAccount	External 🎚	onlyOwner
L	includeAccount	External [	onlyOwner
L	_approve	Private 🖺	
L	_transfer	Private 🖺	
L	_getCurrentSupply	Private 🖺	
L	delegates	External [	NO[
L	delegate	External [	NO
L	delegateBySig	External [	NO
L	getCurrentVotes	External [	NO
L	getPriorVotes	External [	NO
L	_delegate	Internal 🖺	
L	_moveDelegates	Internal 🖺	
L	_writeCheckpoint	Internal 🖺	
L	safe32	Internal 🖺	
L	getChainId	Internal 🖺	
RNBZ_MasterChef	Implementation	Ownable, ReentrancyGuard	
L		Public 🎚	NO

<u> </u>			T	
L	poolLength	External 🌡		NO
L	setMaxWithdrawF ee	Public [		onlyOwner
L	add	External 🌡		onlyOwner nonDuplicate d
L	set	External 🌡		onlyOwner
L	getMultiplier	Public [		NO[
L	pendingRNBO	External 🎚		NO[
L	massUpdatePools	Public [		NO[
L	updatePool	Public [		NO[
L	deposit	Public [		nonReentrant
L	getActualWithdraw FeeRate	Public [		NO
L	withdraw	Public [		nonReentrant
L	emergencyWithdra w	Public [		nonReentrant
L	safeRNBZTransfer	Internal 🖺		
L	setFeeAddress	External [		onlyOwner
L	updateEmissionRa te	External [		onlyOwner
L	updateStartBlock	External 🌡		onlyOwner

#### Legend

Symbol	Meaning
	Function can modify state
<u>ab</u>	Function is payable

### **Inheritance Hierarchy**



# Security issue checking status

- ❖ High severity issues
  - No high severity issues found.
- **❖** Medium severity issues
  - No medium severity issues found.

#### **❖** Low severity issues

 In the includeInReward function, if they use a long wallet list there can be an OUT\_OF\_GAS issue, better to use a small array list at once.

## Owner privileges

The owner can mint new tokens.

The owner can include and exclude wallets from limitations.

```
ftrace|funcSig
function excludeAccount(address account1) external onlyOwner {
    require(!_isExcluded[account1], "Account is already excluded");
    isExcluded[account1] = true;
    excluded.push(account1);
}

ftrace|funcSig
function includeAccount(address account1) external onlyOwner {
    require(_isExcluded[account1], "Account is already excluded");
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_excluded[i] = account1) {
            excluded[i] = excluded.length - 1];
            isExcluded[account1] = false;
            excluded.pop();
            break;
        }
    }
}</pre>
```

❖ The owner can change the minimum RNBZ holding amount to Enter pools.

```
ftrace|funcSig
function setMinRNBZHolding(uint256 _minRNBZ↑)
   public
   onlyOwner
   returns (bool)
{
   require(
        _minRNBZ↑ > 1 * (10**18),
        "ERR::MinRNBZ:Min RNBZ Req should be greater than 1 RNBZ"
   );
   minRNBZRequired = _minRNBZ↑;
   return true;
}
```

The owner can add new pools.

```
ftrace | funcSig
function add(
    uint256 _allocPoint1,
   IERC20 _lpToken*,
    uint256 _poolWithdrawFee*
) external onlyOwner nonDuplicated(_lpToken) {
    require(poolExistence[ lpToken ] == false, "ERR::Pool:Pool Exist");
    require(_poolWithdrawFee* < 500, "ERR:Fees:Max Fee 1%");
    uint256 lastRewardBlock = block.number > startBlock
        ? block.number
       : startBlock;
    totalAllocPoint = totalAllocPoint.add(_allocPoint1);
    poolInfo.push(
        PoolInfo({
           lpToken: _lpToken1,
           allocPoint: _allocPoint 1,
           lastRewardBlock: lastRewardBlock,
           accRNBOPerShare: 0,
           poolWithdrawFee: _poolWithdrawFee *
       })
    );
```

❖ The owner can change the allocated point and withdraw fee (maximum up to 1%) in a pool.

```
ftrace|funcSig

function set(
    uint256 _pid1,
    uint256 _allocPoint1,
    uint256 _poolWithdrawFee
) external onlyOwner {
    require(_poolWithdrawFee1 < 100, "ERR:Fees:Max Fee 1%");
    massUpdatePools();
    totalAllocPoint = totalAllocPoint.sub(poolInfo[_pid1].allocPoint).add(
        _allocPoint1);
    poolInfo[_pid1].allocPoint = _allocPoint1;
    poolInfo[_pid1].poolWithdrawFee = _poolWithdrawFee1;
}</pre>
```

The owner can change dev and fee address.

The owner can start farming.

```
ftrace|funcSig
  function updateStartBlock(uint256 _startBlock1) external onlyOwner {
      require(startBlock > block.number, "Farm already started");
      startBlock = _startBlock1;
}
```

### **Audit conclusion**

While conducting the audit of the Rainbow farm smart contract, it was observed that there is nothing alarming with the code and it only contains a low severity issue.