



# Smart Contract Security Audit

## Audit details:

Audited project:	SHIKOKU INU
Deployer address:	0xf103d2AbA493749a402B7dE11cF31f5844062B74
Client contacts:	SHIKOKU INU team
Blockchain:	Binance Smart Chain
Project website:	<a href="https://shikoku.exchange">https://shikoku.exchange</a>

May, 2021  
TechRate

# 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 below disclaimer below – please make sure to read it in full.

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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

# Background

TechRate was commissioned by SHIKOKU INU to perform an audit of smart contracts:

- [https://bscscan.com/address/0xb6d053e260d410eac02ea28755696f90a8ecc\\_a2b#code](https://bscscan.com/address/0xb6d053e260d410eac02ea28755696f90a8ecc_a2b#code)

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

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

# Contracts details

Token contract details for 16.05.2021.

Contract name:	SHIKOKU INU
Contract address:	0xB6D053E260d410eAc02eA28755696F90A8ECca2B
Total supply:	100_000_000_000_000_000_000_000
Token ticker:	SHIKO
Decimals:	9
Token holders:	1887
Transactions count:	5786
Top 100 holders dominance:	95.59%
Liquidity fee:	3
Tax fee:	2
Total fees:	2358461243332057168870806
Uniswap V2 pair:	0xee78e0aa04a07a3a948b0ebc4c8966f6c1e748c7
Contract deployer address:	0xf103d2AbA493749a402B7dE11cF31f5844062B74
Contract's current owner address:	0x617fbf101aba1a19b36bbe52f06ac7f58f17f792

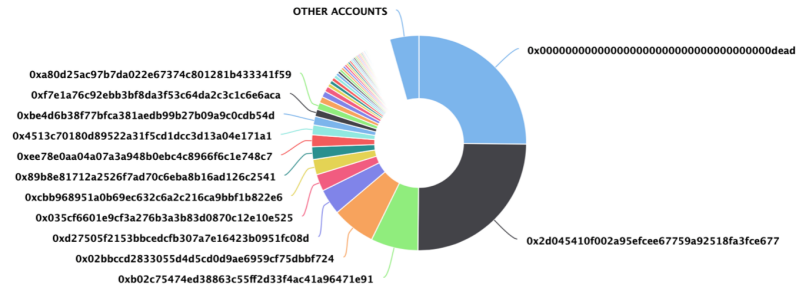
# SHIKOKU INU token distribution

The top 100 holders collectively own 95.59% (95,593,456,112,043,600.00 Tokens) of SHIKOKU INU

Token Total Supply: 100,000,000,000,000.00 Token | Total Token Holders: 1,887

SHIKOKU INU Top 100 Token Holders

Source: BscScan.com



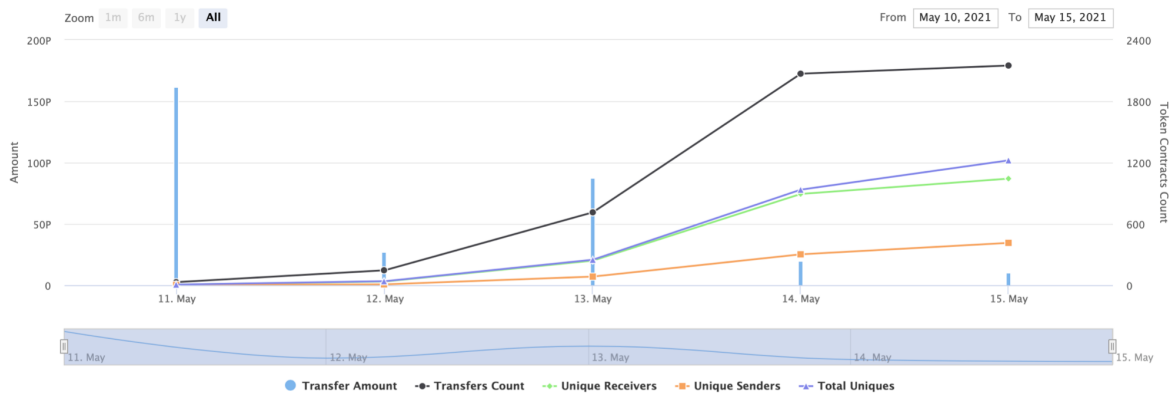
(A total of 95,593,456,112,043,600.00 tokens held by the top 100 accounts from the total supply of 100,000,000,000,000.00 token)

## SHIKOKU INU contract interaction details

Time Series: Token Contract Overview

Tue 11, May 2021 - Sat 15, May 2021

Token Contract 0xb6d053e260d410eac02ea28755696f90a8ecca2b (SHIKOKU INU)  
Source: BscScan.com



# SHIKOKU INU top 10 token holders

Rank	Address	Quantity (Token)	Percentage
1	<a href="#">0x00dead</a>	25,174,724,024,470,000.53207639	25.1747%
2	<a href="#">0x2d045410f002a95efcee67759a92518fa3fce677</a>	25,000,000,000,000,000	25.0000%
3	<a href="#">0xb02c75474ed38863c55ff2d33f4ac41a96471e91</a>	7,113,402,558,697,860.832555004	7.1134%
4	<a href="#">0x02bbccd2833055d4d5cd0d9ae6959cf75dbbf724</a>	6,544,800,304,521,930.127357259	6.5448%
5	<a href="#">0xd27505f2153bbcedcfb307a7e16423b0951fc08d</a>	3,864,689,485,459,140.203452508	3.8647%
6	<a href="#">0x035cf6601e9cf3a276b3ab3d0870c12e10e525</a>	2,540,224,941,809,500.422015814	2.5402%
7	<a href="#">0xcbb968951a0b69ec632c6a2c216ca9bbf1b822e6</a>	2,308,306,569,199,170.628156312	2.3083%
8	<a href="#">0x89b8e81712a2526f7ad70c6eba8b16ad126c2541</a>	1,900,475,467,739,590.23888453	1.9005%
9	<a href="#">0xee78e0aa04a07a3a948b0ebc4c8966f6c1e748c7</a>	1,791,370,498,157,550.297168339	1.7914%
10	<a href="#">0x4513c70180d89522a31f5cd1dcc3d13a04e171a1</a>	1,475,584,796,708,930.829808915	1.4756%

# SHIKOKU INU LP token holders

Rank	Address	Quantity	Percentage	Analytics
1	<a href="#">0xeb3a9c56d963b971d320f889be2fb8b59853e449</a>	11,869.860179138449039915	80.3586%	<a href="#">📊</a>
2	<a href="#">0x617fbf101aba1a19b36bbe52f06ac7f58f17f792</a>	1,709.718853453092825992	11.5747%	<a href="#">📊</a>
3	<a href="#">0x02bbccd2833055d4d5cd0d9ae6959cf75dbbf724</a>	394.861114961868556674	2.6732%	<a href="#">📊</a>
4	<a href="#">0x45001b88d179ec5e961afae799f520b7b760e96a</a>	254.694495504538861372	1.7243%	<a href="#">📊</a>
5	<a href="#">0x964df1b0b7e47326cee4e70a23aedd2837e47240</a>	248.546508752905367428	1.6827%	<a href="#">📊</a>
6	<a href="#">0x07d80ae6f36a5e08dca74ce884a24d39db9934ed</a>	160.042050440556916164	1.0835%	<a href="#">📊</a>
7	<a href="#">0x4513c70180d89522a31f5cd1dcc3d13a04e171a1</a>	75.376576324679992573	0.5103%	<a href="#">📊</a>
8	<a href="#">0x3cbba3497e02b15adb21b34a2cf044902cb07f27</a>	58.008983695911011866	0.3927%	<a href="#">📊</a>
9	<a href="#">0x00</a>	0.000000000000001	0.0000%	<a href="#">📊</a>

# Contract functions details

## + [Int] IERC20

- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] transfer #
- [Ext] allowance
- [Ext] approve #
- [Ext] transferFrom #

## + [Lib] SafeMath

- [Int] add
- [Int] sub
- [Int] sub
- [Int] mul
- [Int] div
- [Int] div
- [Int] mod
- [Int] mod

## + Context

- [Int] \_msgSender
- [Int] \_msgData

## + [Lib] Address

- [Int] isContract
- [Int] sendValue #
- [Int] functionCall #
- [Int] functionCall #
- [Int] functionCallWithValue #
- [Int] functionCallWithValue #
- [Prv] \_functionCallWithValue #

## + Ownable (Context)

- [Pub] owner
- [Pub] renounceOwnership #
  - modifiers: onlyOwner
- [Pub] transferOwnership #
  - modifiers: onlyOwner
- [Pub] geUnlockTime
- [Pub] lock #
  - modifiers: onlyOwner
- [Pub] unlock #

## + [Int] IUniswapV2Factory

- [Ext] feeTo

- [Ext] feeToSetter
- [Ext] getPair
- [Ext] allPairs
- [Ext] allPairsLength
- [Ext] createPair #
- [Ext] setFeeTo #
- [Ext] setFeeToSetter #

#### + [Int] IUniswapV2Pair

- [Ext] name
- [Ext] symbol
- [Ext] decimals
- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] allowance
- [Ext] approve #
- [Ext] transfer #
- [Ext] transferFrom #
- [Ext] DOMAIN\_SEPARATOR
- [Ext] PERMIT\_TYPEHASH
- [Ext] nonces
- [Ext] permit #
- [Ext] MINIMUM\_LIQUIDITY
- [Ext] factory
- [Ext] token0
- [Ext] token1
- [Ext] getReserves
- [Ext] price0CumulativeLast
- [Ext] price1CumulativeLast
- [Ext] kLast
- [Ext] mint #
- [Ext] burn #
- [Ext] swap #
- [Ext] skim #
- [Ext] sync #
- [Ext] initialize #

#### + [Int] IUniswapV2Router01

- [Ext] factory
- [Ext] WETH
- [Ext] addLiquidity #
- [Ext] addLiquidityETH (\$)
- [Ext] removeLiquidity #
- [Ext] removeLiquidityETH #
- [Ext] removeLiquidityWithPermit #
- [Ext] removeLiquidityETHWithPermit #
- [Ext] swapExactTokensForTokens #



- [Ext] swapTokensForExactTokens #
- [Ext] swapExactETHForTokens (\$)
- [Ext] swapTokensForExactETH #
- [Ext] swapExactTokensForETH #
- [Ext] swapETHForExactTokens (\$)
- [Ext] quote
- [Ext] getAmountOut
- [Ext] getAmountIn
- [Ext] getAmountsOut
- [Ext] getAmountsIn

#### + [Int] IUniswapV2Router02 (IUniswapV2Router01)

- [Ext] removeLiquidityETHSupportingFeeOnTransferTokens #
- [Ext] removeLiquidityETHWithPermitSupportingFeeOnTransferTokens #
- [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens #
- [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens (\$)
- [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

#### + CoinToken (Context, IERC20, Ownable)

- [Pub] <Constructor> #
- [Pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #
- [Pub] decreaseAllowance #
- [Pub] isExcludedFromReward
- [Pub] totalFees
- [Pub] deliver #
- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Pub] excludeFromReward #
  - modifiers: onlyOwner
- [Ext] includeInReward #
  - modifiers: onlyOwner
- [Prv] \_transferBothExcluded #
- [Pub] excludeFromFee #
  - modifiers: onlyOwner
- [Pub] includeInFee #
  - modifiers: onlyOwner
- [Ext] setTaxFeePercent #
  - modifiers: onlyOwner

- [Ext] setLiquidityFeePercent #
  - modifiers: onlyOwner
- [Pub] setNumTokensSellToAddToLiquidity #
  - modifiers: onlyOwner
- [Pub] setMaxTxPercent #
  - modifiers: onlyOwner
- [Pub] setSwapAndLiquifyEnabled #
  - modifiers: onlyOwner
- [Ext] <Fallback> (\$)
- [Prv] \_reflectFee #
- [Prv] \_getValues
- [Prv] \_getTValues
- [Prv] \_getRValues
- [Prv] \_getRate
- [Prv] \_getCurrentSupply
- [Prv] \_takeLiquidity #
- [Pub] claimTokens #
  - modifiers: onlyOwner
- [Prv] calculateTaxFee
- [Prv] calculateLiquidityFee
- [Prv] removeAllFee #
- [Prv] restoreAllFee #
- [Pub] isExcludedFromFee
- [Prv] \_approve #
- [Prv] \_transfer #
- [Prv] swapAndLiquify #
  - modifiers: lockTheSwap
- [Prv] swapTokensForEth #
- [Prv] addLiquidity #
- [Prv] \_tokenTransfer #
- [Prv] \_transferStandard #
- [Prv] \_transferToExcluded #
- [Prv] \_transferFromExcluded #

(\$ ) = payable function

# = non-constant function

# Issues Checking Status

№	Issue description.	Checking status
1	Compiler errors.	Passed
2	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3	Possible delays in data delivery.	Passed
4	Oracle calls.	Passed
5	Front running.	Passed
6	Timestamp dependence.	Passed
7	Integer Overflow and Underflow.	Passed
8	DoS with Revert.	Passed
9	DoS with block gas limit.	Low issues
10	Methods execution permissions.	Passed
11	Economy model of the contract.	Passed
12	The impact of the exchange rate on the logic.	Passed
13	Private user data leaks.	Passed
14	Malicious Event log.	Passed
15	Scoping and Declarations.	Passed
16	Uninitialized storage pointers.	Passed
17	Arithmetic accuracy.	Passed
18	Design Logic.	Passed
19	Cross-function race conditions.	Passed
20	Safe Open Zeppelin contracts implementation and usage.	Passed
21	Fallback function security.	Passed

# Security Issues

## High Severity Issues

No high severity issues found.

## Medium Severity Issues

No medium severity issues found.

## Low Severity Issues

### 1. Out of gas

Issue:

- ❑ The function `includeInReward()` uses the loop to find and remove addresses from the `_excluded` list. Function will be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

```
function includeInReward(address account) external onlyOwner() {
    require(!_isExcluded[account], "Account is already excluded");
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_excluded[i] == account) {
            _excluded[i] = _excluded[_excluded.length - 1];
            tOwned[account] = 0;
            _isExcluded[account] = false;
            _excluded.pop();
            break;
        }
    }
}
```

- ❑ The function `_getCurrentSupply` also uses the loop for evaluating total supply. It also could be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

```
function _getCurrentSupply() private view returns (uint256, uint256) {
    uint256 rSupply = _rTotal;
    uint256 tSupply = _tTotal;
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (
            _rOwned[_excluded[i]] > rSupply ||
            _tOwned[_excluded[i]] > tSupply
        ) return (_rTotal, _tTotal);
        rSupply = rSupply.sub(_rOwned[_excluded[i]]);
        tSupply = tSupply.sub(_tOwned[_excluded[i]]);
    }
    if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
    return (rSupply, tSupply);
}
```

Recommendation:

Use EnumerableSet instead of array or do not use long arrays.

## Owner privileges (In the period when the owner is not renounced)

❑ Owner can change the tax and liquidity fee.

```
function setTaxFeePercent(uint256 taxFee) external onlyOwner() {
    _taxFee = taxFee;
}

function setLiquidityFeePercent(uint256 liquidityFee) external onlyOwner() {
    _liquidityFee = liquidityFee;
}
```

❑ Owner can change the maximum transaction amount.

```
function setMaxTxPercent(uint256 maxTxPercent) external onlyOwner() {
    _maxTxAmount = _tTotal.mul(maxTxPercent).div(
        10**2
    );
}
```

❑ Owner can exclude from the fee.

```
function excludeFromFee(address account) public onlyOwner {
    _isExcludedFromFee[account] = true;
}
```

❑ Owner can claim tokens

```
function claimTokens() public onlyOwner {
    payable(_owner).transfer(address(this).balance);
}
```

❑ Owner can change numTokensSellToAddToLiquidity

```
function setNumTokensSellToAddToLiquidity(uint256 swapNumber) public onlyOwner {
    numTokensSellToAddToLiquidity = swapNumber * 10 ** _decimals;
}
```

# Conclusion

Smart contracts contain low severity issues. LP pair contract is not checked.

Liquidity locking details provided by the team:

<https://dxsale.app/app/pages/dxlockview?id=0&add=0x617FBf101aba1A19b36BBe52F06Ac7f58f17F792&type=lplock&chain=BSC>

Techrate note:

*Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.*