



TechRate
AUDIT COMPANY

Smart Contract Security Audit

Audit Details



Audited project

BEAGLE CAKE



Deployer address

0x90b2cb9df78074d3383b0bb9c87ad0f0cba7ea43



Client contacts:

BEAGLE CAKE team



Blockchain

Binance Smart Chain



Project website:

Not provided

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 BEAGLE CAKE to perform an audit of smart contracts:

<https://bscscan.com/address/0x0d8011438c8feb5938d74969ec7b7dddeda12054#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

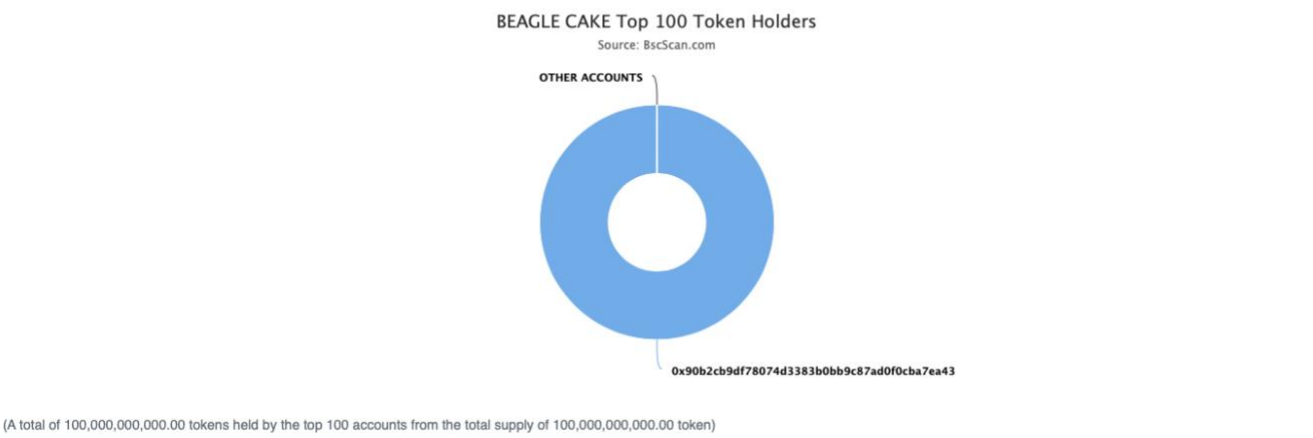
Token contract details for 04.10.2021

Contract name	BEAGLE CAKE
Contract address	0x0d8011438c8feb5938D74969ec7B7DDdEDA12054
Total supply	100,000,000,000
Token ticker	BEAGLECAKE
Decimals	18
Token holders	1
Transactions count	1
Top 100 holders dominance	100.00%
Liquidity fee	3
Cake reward fee	7
Marketing fee	5
Total fees	15
Dividend tracker	0xf9934b0addca03e2e6b650370fb022d10ca5ae11
Uniswap V2 pair	0xf619e12121681064bd83712740ca14a1a64f99e5
Contract deployer address	0x90b2cb9df78074d3383b0bb9c87ad0f0cba7ea43
Contract's current owner address	0x90b2cb9df78074d3383b0bb9c87ad0f0cba7ea43

BEAGLE CAKE Token Distribution

The top 100 holders collectively own 100.00% (100,000,000,000.00 Tokens) of BEAGLE CAKE

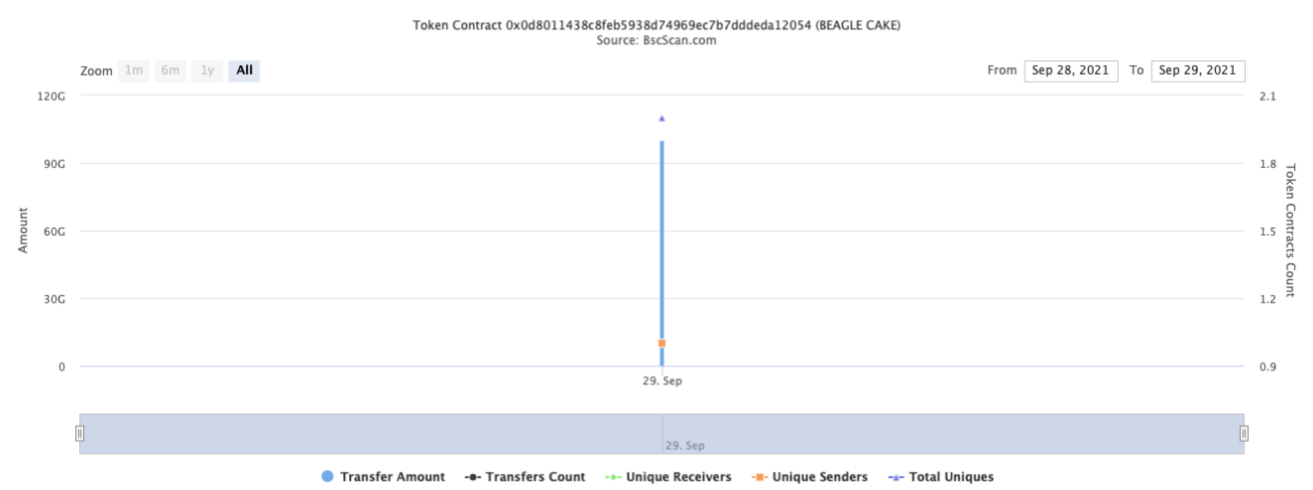
Token Total Supply: 100,000,000,000.00 Token | Total Token Holders: 1



BEAGLE CAKE Contract Interaction Details

Time Series: Token Contract Overview

Wed 29, Sept 2021 - Wed 29, Sept 2021



BEAGLE CAKE Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	0x90b2cb9df78074d3383b0bb9c87ad0f0cba7ea43	100,000,000,000	100.0000%



Contract functions details

- + [Lib] SafeMathUint
 - [Int] toInt256Safe
- + [Lib] SafeMathInt
 - [Int] mul
 - [Int] div
 - [Int] sub
 - [Int] add
 - [Int] abs
 - [Int] toUint256Safe
- + [Lib] SafeMath
 - [Int] add
 - [Int] sub
 - [Int] sub
 - [Int] mul
 - [Int] div
 - [Int] div
 - [Int] mod
 - [Int] mod
- + Ownable (Context)
 - [Pub] <Constructor> #
 - [Pub] owner
 - [Pub] renounceOwnership #
 - modifiers: onlyOwner
 - [Pub] transferOwnership #
 - modifiers: onlyOwner
- + [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 #

- + [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] IUniswapV2Factory
 - [Ext] feeTo
 - [Ext] feeToSetter
 - [Ext] getPair
 - [Ext] allPairs
 - [Ext] allPairsLength
 - [Ext] createPair #
 - [Ext] setFeeTo #
 - [Ext] setFeeToSetter #

- + [Lib] IterableMapping
 - [Pub] get
 - [Pub] getIndexOfKey
 - [Pub] getKeyAtIndex
 - [Pub] size
 - [Pub] set #
 - [Pub] remove #

- + [Int] IERC20Metadata (IERC20)
 - [Ext] name

- [Ext] symbol
- [Ext] decimals

+ [Int] IERC20

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

+ ERC20 (Context, IERC20, IERC20Metadata)

- [Pub] <Constructor> #
- [Pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #
- [Pub] decreaseAllowance #
- [Int] _transfer #
- [Int] _mint #
- [Int] _burn #
- [Int] _approve #
- [Int] _beforeTokenTransfer #

+ [Int] DividendPayingTokenOptionalInterface

- [Ext] withdrawableDividendOf
- [Ext] withdrawnDividendOf
- [Ext] accumulativeDividendOf

+ [Int] DividendPayingTokenInterface

- [Ext] dividendOf
- [Ext] withdrawDividend #

+ DividendPayingToken (ERC20, Ownable, DividendPayingTokenInterface, DividendPayingTokenOptionalInterface)

- [Pub] <Constructor> #
 - modifiers: ERC20
- [Pub] distributeCAKEDividends #
 - modifiers: onlyOwner
- [Pub] withdrawDividend #
- [Int] _withdrawDividendOfUser #
- [Pub] dividendOf
- [Pub] withdrawableDividendOf
- [Pub] withdrawnDividendOf
- [Pub] accumulativeDividendOf
- [Int] _transfer #
- [Int] _mint #
- [Int] _burn #
- [Int] _setBalance #

+ Context

- [Int] _msgSender
- [Int] _msgData

+ BEAGLECAKE (ERC20, Ownable)

- [Pub] <Constructor> #
 - modifiers: ERC20
- [Ext] <Fallback> (\$)
- [Pub] updateDividendTracker #
 - modifiers: onlyOwner
- [Pub] updateUniswapV2Router #
 - modifiers: onlyOwner
- [Pub] excludeFromFees #
 - modifiers: onlyOwner
- [Pub] excludeMultipleAccountsFromFees #
 - modifiers: onlyOwner
- [Ext] setMarketingWallet #
 - modifiers: onlyOwner
- [Ext] setCAKERewardsFee #
 - modifiers: onlyOwner
- [Ext] setLiquiditFee #
 - modifiers: onlyOwner
- [Ext] setMarketingFee #
 - modifiers: onlyOwner
- [Pub] setAutomatedMarketMakerPair #
 - modifiers: onlyOwner
- [Prv] _setAutomatedMarketMakerPair #
- [Pub] updateGasForProcessing #
 - modifiers: onlyOwner
- [Ext] updateClaimWait #
 - modifiers: onlyOwner
- [Ext] getClaimWait
- [Ext] getTotalDividendsDistributed
- [Pub] isExcludedFromFees
- [Pub] withdrawableDividendOf
- [Pub] dividendTokenBalanceOf
- [Ext] excludeFromDividends #
 - modifiers: onlyOwner
- [Ext] getAccountDividendsInfo
- [Ext] getAccountDividendsInfoAtIndex
- [Ext] processDividendTracker #
- [Ext] claim #
- [Ext] getLastProcessedIndex
- [Ext] getNumberOfDividendTokenHolders
- [Int] _transfer #
- [Prv] swapAndSendToFee #
- [Prv] swapAndLiquify #
- [Prv] swapTokensForEth #
- [Prv] swapTokensForCake #
- [Prv] addLiquidity #
- [Prv] swapAndSendDividends #

+ BEAGLECAKEDividendTracker (Ownable, DividendPayingToken)

- [Pub] <Constructor> #

- modifiers: DividendPayingToken
- [Int] _transfer #
- [Pub] withdrawDividend #
- [Ext] excludeFromDividends #
 - modifiers: onlyOwner
- [Ext] updateClaimWait #
 - modifiers: onlyOwner
- [Ext] getLastProcessedIndex
- [Ext] getNumberOfTokenHolders
- [Pub] getAccount
- [Pub] getAccountAtIndex
- [Prv] canAutoClaim
- [Ext] setBalance #
 - modifiers: onlyOwner
- [Pub] process #
- [Pub] processAccount #
 - modifiers: onlyOwner

(\$) = 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 `excludeMultipleAccountsFromFees()` uses the loop to exclude multiple accounts from fees. Function will be aborted with `OUT_OF_GAS` exception if there will be a long addresses list.

Recommendation:

Be careful about accounts array length.

Notes:

- Dividend tracker may be changed. So that logic of `setBalance` and other functions could be another and not audited.

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

- Owner can change dividend tracker.
- Owner can change Uniswap router address.
- Owner can exclude from the fees.
- Owner can change liquidity, marketing and CAKE reward fees.
- Owner can exclude and include addresses in `automatedMarketMakerPairs` array.
- Owner can exclude from dividends.
- Owner can change marketing wallet.
- Owner can change gas for processing.
- Owner can update `claimWait` value.

Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope. The further transfers and operations with the funds raise are not related to this particular contract.

Liquidity locking details are NOT provided by the team.

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.