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AUDIT COMPANY

Smart Contract Security Audit

TechRate

November, 2021

Audit Details

Audited project

SolidETH

Deployer address

0x5fb71dbf7248a01bf96ce2ab2da34eeabe58c261

Client contacts:

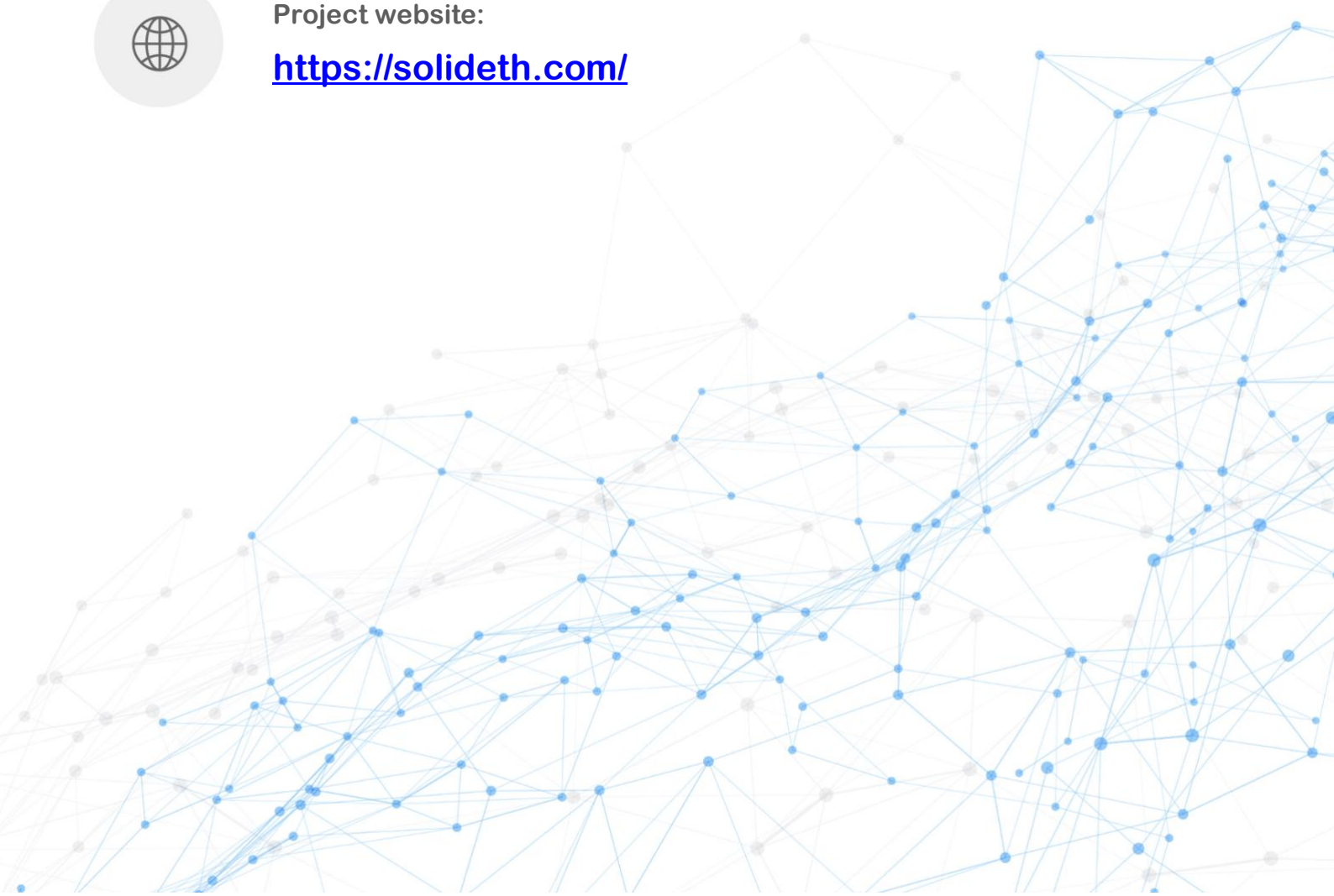
SolidETH team

Blockchain

Binance Smart Chain

Project website:

https://solideth.com/



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 SolidETH to perform an audit of smart contracts:
https://bscscan.com/address/0x5d772ca965648bcdbc263a7e672b46d214cca432#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

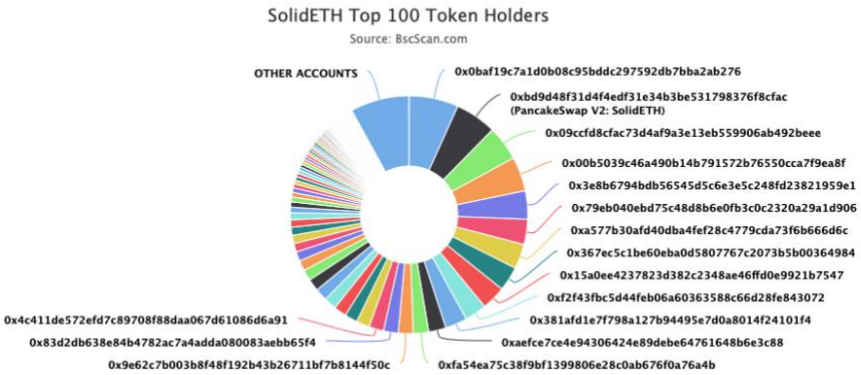
Token contract details for 29.11.2021

Contract name	SolidETH
Contract address	0x5d772Ca965648BcdBC263a7E672B46d214CcA432
Total supply	100,000,000,000,000
Token ticker	SolidETH
Decimals	18
Token holders	1,199
Transactions count	8,850
Top 100 holders dominance	92.00%
Reward token	0x2170ed0880ac9a755fd29b2688956bd959f933f8
Total fees	15
Token rewards fee	8
Uniswap V2 pair	0xbd9d48f31d4f4edf31e34b3be531798376f8cfac
Contract deployer address	0x5fb71dbf7248a01bf96ce2ab2da34eeabe58c261
Contract's current owner address	0xad7ac8acc052926ca9cc3efc0d2452afbf6cb546

SolidETH Token Distribution

The top 100 holders collectively own 92.00% (92,001,119,542,868.60 Tokens) of SolidETH

Token Total Supply: 100,000,000,000,000.00 Token | Total Token Holders: 1,199

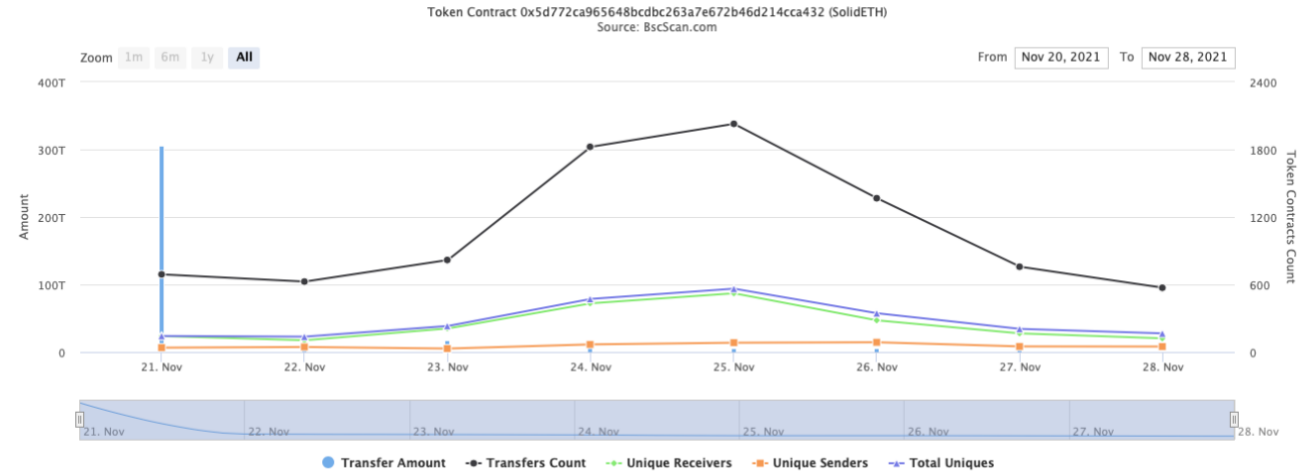


(A total of 92,001,119,542,868.60 tokens held by the top 100 accounts from the total supply of 100,000,000,000,000.00 token)

SolidETH Contract Interaction Details

Time Series: Token Contract Overview

Sun 21, Nov 2021 - Sun 28, Nov 2021



SolidETH Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	0x0baf19c7a1d0b08c95bddc297592db7bba2ab276	6,740,551,000,004.25	6.7406%
2	PancakeSwap V2: SolidETH	5,645,792,642,122.158895781807377881	5.6458%
3	0x09ccfd8cfac73d4af9a3e13eb559906ab492beee	4,723,810,977,697.68097954014422037	4.7238%
4	0x00b5039c46a490b14b791572b76550cca7f9ea8f	4,651,178,148,965	4.6512%
5	0x3e8b6794bdb56545d5c6e3e5c248fd23821959e1	3,863,258,110,558.389424375818857903	3.8633%
6	0x79eb040ebd75c48d8b6e0fb3c0c2320a29a1d906	3,422,706,256,068.604014303593435417	3.4227%
7	0xa577b30afd40dba4fef28c4779cda73f6b666d6c	3,372,803,617,406.018931500986559387	3.3728%
8	0x367ec5c1be60eba0d5807767c2073b5b00364984	3,330,098,461,379.458892809858650855	3.3301%
9	0x15a0ee4237823d382c2348ae46ffd0e9921b7547	3,267,731,500,000.0017	3.2677%
10	0xf2f43fbc5d44feb06a60363588c66d28fe843072	3,000,000,000,000	3.0000%

Contract functions details

+ Context
  - [Int] _msgSender
  - [Int] _msgData

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

+ [Lib] SafeMathUint
  - [Int] toInt256Safe

+ [Lib] SafeMathInt
  - [Int] mul
  - [Int] div
  - [Int] sub
  - [Int] add
  - [Int] abs
  - [Int] toUint256Safe

+ [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 #

+ Ownable (Context)
  - [Pub] <Constructor> #
  - [Pub] owner
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner

+ ERC20 (Context, IERC20)
  - [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] _setupDecimals #
  - [Int] _beforeTokenTransfer #

+ [Lib] AddressUpgradeable
  - [Int] isContract
  - [Int] sendValue #
  - [Int] functionCall #
  - [Int] functionCall #
  - [Int] functionCallWithValue #
  - [Int] functionCallWithValue #
  - [Int] functionStaticCall
  - [Int] functionStaticCall
  - [Prv] _verifyCallResult

+ Initializable
  - [Prv] _isConstructor

+ [Lib] SafeMathUpgradeable
  - [Int] tryAdd
  - [Int] trySub
  - [Int] tryMul
  - [Int] tryDiv
  - [Int] tryMod
  - [Int] add
  - [Int] sub
  - [Int] mul
  - [Int] div
  - [Int] mod
  - [Int] sub

  - [Int] div
  - [Int] mod

+ [Int] IERC20Upgradeable
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] transfer #
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transferFrom #

+ ContextUpgradeable (Initializable)
  - [Int] __Context_init #
    - modifiers: initializer
  - [Int] __Context_init_unchained #
    - modifiers: initializer
  - [Int] _msgSender
  - [Int] _msgData

+ [Int] IAntiBotBabyToken
  - [Ext] initialize #

+ [Int] IPinkAntiBot
  - [Ext] setTokenOwner #
  - [Ext] onPreTransferCheck #

+ [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] IUniswapV2Factory

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

+ [Lib] Clones
- [Int] clone #
- [Int] cloneDeterministic #
- [Int] predictDeterministicAddress
- [Int] predictDeterministicAddress

+ [Lib] SafeMath
- [Int] tryAdd
- [Int] trySub
- [Int] tryMul
- [Int] tryDiv
- [Int] tryMod
- [Int] add
- [Int] sub
- [Int] mul
- [Int] div
- [Int] mod
- [Int] sub
- [Int] div
- [Int] mod

+ OwnableUpgradeable (Initializable, ContextUpgradeable)
- [Int] __Ownable_init #
  - modifiers: initializer
- [Int] __Ownable_init_unchained #
  - modifiers: initializer
- [Pub] owner
- [Pub] renounceOwnership #
  - modifiers: onlyOwner
- [Pub] transferOwnership #
  - modifiers: onlyOwner

+ [Int] IERC20
- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] transfer #
- [Ext] allowance
- [Ext] approve #
- [Ext] transferFrom #

+ ERC20Upgradeable (Initializable, ContextUpgradeable, IERC20Upgradeable)
- [Int] __ERC20_init #
  - modifiers: initializer
- [Int] __ERC20_init_unchained #
  - modifiers: initializer
- [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] _setupDecimals #
- [Int] _beforeTokenTransfer #

+ [Int] DividendPayingTokenInterface
- [Ext] dividendOf
- [Ext] withdrawDividend #

+ [Int] DividendPayingTokenOptionalInterface
- [Ext] withdrawableDividendOf
- [Ext] withdrawnDividendOf
- [Ext] accumulativeDividendOf

+ DividendPayingToken (ERC20Upgradeable, OwnableUpgradeable, DividendPayingTokenInterface, DividendPayingTokenOptionalInterface)
- [Int] __DividendPayingToken_init #
  - modifiers: initializer
- [Pub] distributeCAKEDividends #
  - modifiers: onlyOwner
- [Pub] withdrawDividend #
- [Int] _withdrawDividendOfUser #
- [Pub] dividendOf
- [Pub] withdrawableDividendOf
- [Pub] withdrawnDividendOf
- [Pub] accumulativeDividendOf
- [Int] _transfer #
- [Int] _mint #
- [Int] _burn #
- [Int] _setBalance #

+ AntiBotBABYTOKEN (ERC20Upgradeable, OwnableUpgradeable, IAntiBotBabyToken)
- [Ext] initialize #
  - modifiers: initializer
- [Ext] setEnableAntiBot #
  - modifiers: onlyOwner
- [Ext] <Fallback> ($)
- [Ext] setSwapTokensAtAmount #
  - modifiers: onlyOwner
- [Pub] updateDividendTracker #
  - modifiers: onlyOwner
- [Pub] updateUniswapV2Router #

  - modifiers: onlyOwner
- [Pub] excludeFromFees #
  - modifiers: onlyOwner
- [Pub] excludeMultipleAccountsFromFees #
  - modifiers: onlyOwner
- [Ext] setMarketingWallet #
  - modifiers: onlyOwner
- [Ext] setTokenRewardsFee #
  - modifiers: onlyOwner
- [Ext] setLiquiditFee #
  - modifiers: onlyOwner
- [Ext] setMarketingFee #
  - modifiers: onlyOwner
- [Pub] setAutomatedMarketMakerPair #
  - modifiers: onlyOwner
- [Ext] blacklistAddress #
  - 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 #

+ BABYTOKENDividendTracker (OwnableUpgradeable, DividendPayingToken)
- [Ext] initialize #
  - modifiers: initializer
- [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:

- Owner can change dividend tracker that could be not audited and some functions may work in different ways.

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

- Owner can enable/disable antibot.
- Owner can change swapTokensAtAmount.
- Owner can change dividend tracker.
- Owner can change Uniswap router address.
- Owner can exclude from the fees.
- Owner can blacklist addresses.
- Owner can change liquidity, marketing and tokenReward 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. Contract contain interfaces that are not audited, some functions may work different ways.

Liquidity locking details provided by the team:
https://mudra.website/?certificate=yes&type=0&lp=0xbd9d48f31d4f4edf31e34b3be531798376f8cfac

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.