RugFreeCoins Audit

Safemoonomics Token

Smart Contract Security Audit

December 6, 2021

Contents

Audit details

Audited project

Safemoonomics Token

Contract Address

0x6D50Fdd8e79C95F1CD605ab8Fa4707ce81405EDF

Client contact

Safemoonomics Token Team

Blockchain

Binance smart chain

Project website

https://www.safemoonomicstoken.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 disclaimer below – please make sure to read it in full.

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Background

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

https://bscscan.com/token/0x6D50Fdd8e79C95F1CD605ab8Fa4707ce81405EDF

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

Safemoonomics Token is a token built on the Binance Smart Chain that investors have a chance to earn SafeMoon rewards. Each transaction, purchase incurs a 12% fee, and sell incur a 16% fee.

Features

- 5% of each transaction when buying and 7% when selling gets sent amongst all holders in Safemoon rewards. The holders will be eligible to receive Safemoon, everyone hour, and rewards are proportional to how many tokens each individual holds.

- The **sustainability fee of 6% when buying and selling for marketing** is what allows Safemoonomics to hold the aforementioned promise. Tokens will be swapped into BNBs and will be sent to a marketing wallet, which will be allocated for marketing. This way, Safemoonomics token will have enough funds to promote the coin and spend for future development without selling tokens as the traditional way.

- The additional component included under the sustainability section is a **liquidity fee of 1% when buying and 3% when selling,** which is a redistribution mechanism that ensures the trading pool always has sufficient liquidity. This is a key element for decentralized exchanges like Pancakeswap.

Tokenomics

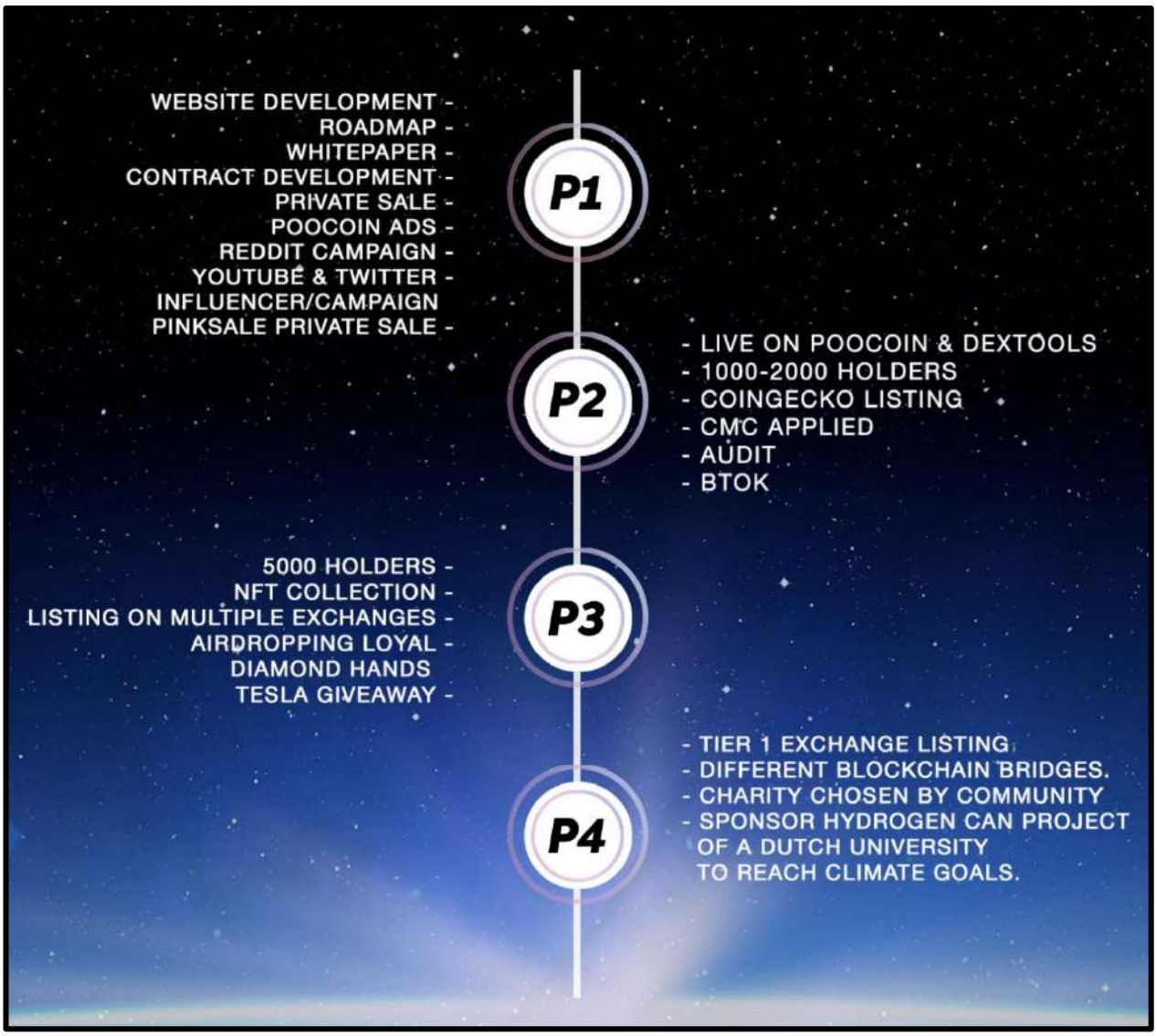
12% fee when buying

- 5% of trade goes to holders pockets in Safemoon.
- 6% of trade goes to the marketing wallet.
- 1% of trade goes to the liquidity pool.

16% fee when selling

- 7% of trade goes to holders pockets in Safemoon.
- 6% of trade goes to the marketing wallet.
- 3% of trade goes to the liquidity pool.

Roadmap


WEBSITE DEVELOPMENT -
ROADMAP -
WHITEPAPER -
CONTRACT DEVELOPMENT -
PRIVATE SALE -
POOCOIN ADS -
REDDIT CAMPAIGN -
YOUTUBE & TWITTER -
INFLUENCER/CAMPAIGN
PINKSALE PRIVATE SALE -
P1
P2
- LIVE ON POOCOIN & DEXTOOLS
- 1000-2000 HOLDERS
- COINGECKO LISTING
- CMC APPLIED
- AUDIT
- BTOK
5000 HOLDERS -
NFT COLLECTION -
LISTING ON MULTIPLE EXCHANGES -
AIRDROPPING LOYAL -
DIAMOND HANDS
TESLA GIVEAWAY -
P3
P4
- TIER 1 EXCHANGE LISTING
- DIFFERENT BLOCKCHAIN BRIDGES.
- CHARITY CHOSEN BY COMMUNITY
- SPONSOR HYDROGEN CAN PROJECT
OF A DUTCH UNIVERSITY
TO REACH CLIMATE GOALS.

Target market and the concept

Target market

- Anyone who's interested in Crypto space with long term investment plans.
- Anyone who's ready to earn a passive income in Safemoon by holding tokens.
- Anyone who's interested in trading tokens.
- Anyone who's interested in taking part in the weekly giveaways and rewards.
- Anyone who's interested in taking part with the future plans of the Safemoonomics token.
- Anyone who's interested in making financial transactions with any other party using Safemoonomics token as the currency.

Core concept

The Safemoon reward system

5% of each transaction when buying and 7% when selling gets sent amongst all holders in Safemoon rewards. The holders will be eligible to receive Safemoon, every one hour, and rewards are proportional to how many tokens each individual holds.

Sustainable mechanism

The **sustainability fee of 6% when buying and selling to the marketing wallet will be allocated for marketing, development, and team**. This is what allows Safemoonomics Token to promote the token and use funds to further the development of the platform. Tokens will be swapped into BNB and will be sent to a marketing and gaming pool wallet per transaction. This way, Safemoonomics Token will have access to the funds without selling tokens as the traditional way, which will enable them to consume funds without hurting the project.

The liquidity fee of 1% when buying and 3% when selling, which is a redistribution mechanism that ensures the trading pool always has sufficient liquidity.

Potential to grow with score points

1.	Project efficiency	8/10
2.	Project uniqueness	8/10
3	Information quality	8/10
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 Points		**8.25/10**

Contract details

Token contract details for 06th December 2021

Contract name	SafeMoonomics
Contract address	0x6D50Fdd8e79C95F1CD605ab8Fa4707ce81405EDF
Token supply	1,000,000,000,000,000
Token ticker	SAFEMOONOMICS
Decimals	9
Token holders	1
Transaction count	1
Dividend tracker	0x5e43809616996104e3cc37f0aca0a18f7dab854c
Marketing wallet	0x9d79bc333e770d48f220658b72a7a1d9f0c3a4e2
Contract deployer address	0xD9EA912E0169388dfAe2fADfEfaaca85dC505066
Contract's current owner address	0xd9ea912e0169388dfae2fadfefaaca85dc505066

Contract code function details

No	Category	Item	Result
1	Coding conventions	BRC20 Token standards	pass
		compile errors	pass
		Compiler version security	pass
		visibility specifiers	pass
		Gas consumption	pass
		SafeMath features	pass
		Fallback usage	pass
		tx.origin usage	pass
		deprecated items	pass
		Redundant code	pass
		Overriding variables	pass
2	Function call audit	Authorization of function call	pass
		Low level function (call/delegate call) security	pass
		Returned value security	pass
		Selfdestruct function security	pass
3	Business security	Access control of owners	pass
		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.

Contract	**Type**	**Bases**		
└	Function Name	Visibility	Mutability	Modifiers
Context	**Implementation**			
└	_msgSender	Internal 🔒		
└	_msgData	Internal 🔒		
Ownable	**Implementation**	**Context**		
└		Public ❗	🛑	NO❗
└	owner	Public ❗		NO❗
└	renounceOwnership	Public ❗	🛑	onlyOwner
└	transferOwnership	Public ❗	🛑	onlyOwner
IERC20	**Interface**			
└	totalSupply	External ❗		NO❗
└	balanceOf	External ❗		NO❗
└	transfer	External ❗	🛑	NO❗

└	allowance	External ❗		NO❗
└	approve	External ❗	🔘	NO❗
└	transferFrom	External ❗	🔘	NO❗
ERC20	**Implementation**	**Context, IERC20**		
└		Public ❗	🔘	NO❗
└	name	Public ❗		NO❗
└	symbol	Public ❗		NO❗
└	decimals	Public ❗		NO❗
└	totalSupply	Public ❗		NO❗
└	balanceOf	Public ❗		NO❗
└	transfer	Public ❗	🔘	NO❗
└	allowance	Public ❗		NO❗
└	approve	Public ❗	🔘	NO❗
└	transferFrom	Public ❗	🔘	NO❗
└	increaseAllowance	Public ❗	🔘	NO❗
└	decreaseAllowance	Public ❗	🔘	NO❗
└	_transfer	Internal 🔒	🔘	

└	_mint	Internal 🔒	🛑	
└	_burn	Internal 🔒	🛑	
└	_approve	Internal 🔒	🛑	
└	_setupDecimals	Internal 🔒	🛑	
└	_beforeTokenTransfer	Internal 🔒	🛑	
IDividendPayingToken	**Interface**			
└	dividendOf	External ❗		NO❗
└	distributeDividends	External ❗	💸	NO❗
└	withdrawDividend	External ❗	🛑	NO❗
IDividendPayingTokenOptional	**Interface**			
└	withdrawableDividendOf	External ❗		NO❗
└	withdrawnDividendOf	External ❗		NO❗
└	accumulativeDividendOf	External ❗		NO❗
DividendPayingToken	**Implementation**	**ERC20, IDividendPayingToken, IDividendPayingTokenOptional**		
└		Public ❗	🛑	ERC20

└		External ❗	💸	NO❗
└	distributeDividends	Public ❗	💸	NO❗
└	distributeDividends	Public ❗	🛑	NO❗
└	withdrawDividend	Public ❗	🛑	NO❗
└	setDividendTokenAddress	Public ❗	🛑	NO❗
└	_withdrawDividendOfUser	Internal 🔒	🛑	
└	dividendOf	Public ❗		NO❗
└	withdrawableDividendOf	Public ❗		NO❗
└	withdrawnDividendOf	Public ❗		NO❗
└	accumulativeDividendOf	Public ❗		NO❗
└	_transfer	Internal 🔒	🛑	
└	_mint	Internal 🔒	🛑	
└	_burn	Internal 🔒	🛑	
└	_setBalance	Internal 🔒	🛑	
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❗

L	PERMIT_TYPEHASH	External ❗		NO❗
L	nonces	External ❗		NO❗
L	permit	External ❗	🔘	NO❗
L	MINIMUM_LIQUIDITY	External ❗		NO❗
L	factory	External ❗		NO❗
L	token0	External ❗		NO❗
L	token1	External ❗		NO❗
L	getReserves	External ❗		NO❗
L	price0CumulativeLast	External ❗		NO❗
L	price1CumulativeLast	External ❗		NO❗
L	kLast	External ❗		NO❗
L	mint	External ❗	🔘	NO❗
L	burn	External ❗	🔘	NO❗
L	swap	External ❗	🔘	NO❗
L	skim	External ❗	🔘	NO❗
L	sync	External ❗	🔘	NO❗
L	initialize	External ❗	🔘	NO❗

IUniswapV2Router01	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❗
IterableMapping	**Library**			
└	get	Public ❗		NO❗
└	getIndexOfKey	Public ❗		NO❗
└	getKeyAtIndex	Public ❗		NO❗
└	size	Public ❗		NO❗
└	set	Public ❗	🔘	NO❗

└	remove	Public ❗	🛑	NO❗
SafeMath	**Library**			
└	tryAdd	Internal 🔒		
└	trySub	Internal 🔒		
└	tryMul	Internal 🔒		
└	tryDiv	Internal 🔒		
└	tryMod	Internal 🔒		
└	add	Internal 🔒		
└	sub	Internal 🔒		
└	mul	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
└	sub	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
SafeMathInt	**Library**			
└	mul	Internal 🔒		

└	div	Internal 🔒		
└	sub	Internal 🔒		
└	add	Internal 🔒		
└	toUint256Safe	Internal 🔒		
SafeMathUint	**Library**			
└	toInt256Safe	Internal 🔒		
SMNToken	**Implementation**	**ERC20, Ownable**		
└		Public ❗	🛑	ERC20
└		External ❗	💸	NO❗
└	whitelistDxSale	Public ❗	🛑	onlyOwner
└	clearBNB	External ❗	🛑	onlyOwner
└	setTradingIsEnabled	Public ❗	🛑	onlyOwner
└	updateDividendTracker	Public ❗	🛑	onlyOwner
└	updateBuylFees	Public ❗	🛑	onlyOwner
└	updateSellFees	Public ❗	🛑	onlyOwner
└	updateUniswapV2Router	Public ❗	🛑	onlyOwner
└	excludeFromFees	Public ❗	🛑	onlyOwner

L	excludeMultipleAccountsFromFees	Public	◉	onlyOwner
L	setAutomatedMarketMakerPair	Public	◉	onlyOwner
L	_setAutomatedMarketMakerPair	Private	◉	
L	updateGasForProcessing	Public	◉	onlyOwner
L	updateClaimWait	External	◉	onlyOwner
L	getClaimWait	External		NO
L	getTotalDividendsDistributed	External		NO
L	isExcludedFromFees	Public		NO
L	withdrawableDividendOf	Public		NO
L	dividendTokenBalanceOf	Public		NO
L	getAccountDividendsInfo	External		NO
L	getAccountDividendsInfoAtIndex	External		NO
L	processDividendTracker	External	◉	NO
L	claim	External	◉	NO
L	getLastProcessedIndex	External		NO
L	getNumberOfDividendTokenHolders	External		NO
L	isBlackListed	Public		NO
L	blacklistUpdate	Public	◉	onlyOwner

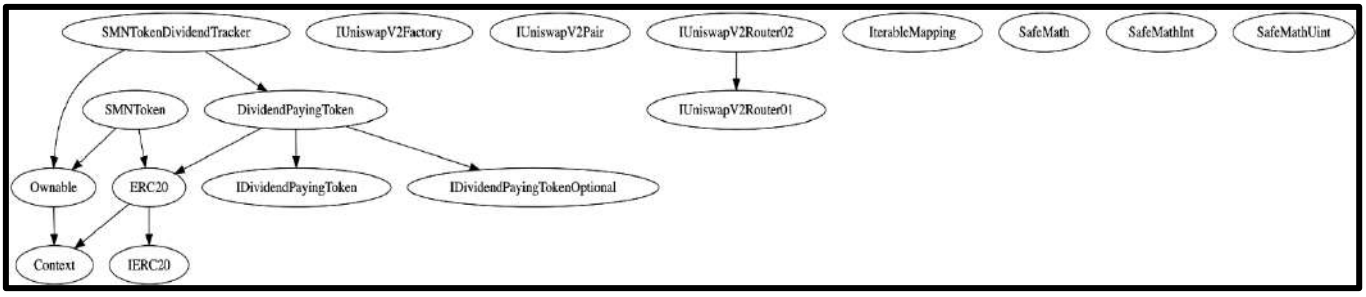
└	_transfer	Internal 🔒	🛑	
└	swapTokensForBNB	Private 🔐	🛑	
└	swapTokensForDividendToken	Private 🔐	🛑	
└	swapAndSendDividends	Private 🔐	🛑	
└	swapAndSendDividendsInBNB	Private 🔐	🛑	
└	transferToWallet	Private 🔐	🛑	
└	swapAndLiquify	Private 🔐	🛑	
└	addLiquidity	Private 🔐	🛑	
SMNTokenDividendTracker	**Implementation**	**DividendPayingToken, Ownable**		
└		Public ❗	🛑	DividendPayingToken
└	_transfer	Internal 🔒		
└	withdrawDividend	Public ❗		NO❗
└	excludeFromDividends	External ❗	🛑	onlyOwner
└	updateClaimWait	External ❗	🛑	onlyOwner
└	getLastProcessedIndex	External ❗		NO❗
└	getNumberOfTokenHolders	External ❗		NO❗
└	getAccount	Public ❗		NO❗

L	getAccountAtIndex	Public ❗		NO❗
L	canAutoClaim	Private 🔐		
L	setBalance	External ❗	🛑	onlyOwner
L	process	Public ❗	🛑	NO❗
L	processAccount	Public ❗	🛑	onlyOwner

Legend

Symbol	Meaning
🛑	**Function can modify state**
💵	**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**
  No low severity issues found.

Owner privileges

- The owner can whitelist the pre-sale address.

```
ftrace | funcSig
function whitelistDxSale(address _presaleAddress⬆) public onlyOwner {
    presaleAddress = _presaleAddress⬆;
    dividendTracker.excludeFromDividends(_presaleAddress⬆);
    excludeFromFees(_presaleAddress⬆, true);
}
```

- The owner can change the max transaction amount.

```
ftrace | funcSig
function setMaxTransaction(uint256 maxTxn⬆) external onlyOwner {
    maxTranscationAmount = maxTxn⬆ * (10**9);
}
```

- The owner can get the contract BNB balance to the marketing wallet.

```
ftrace | funcSig
function clearBNB(uint256 amount⬆) external onlyOwner {
    require(amount⬆ < address(this).balance, "Invalid BNB Amount'");
    transferToWallet(
        payable(marketingWallet),
        address(this).balance.div(10**2).mul(amount⬆)
    );
}
```

- The owner can enable/disable trading.

```
ftrace | funcSig
function setTradingIsEnabled(bool _enabled⬆) public onlyOwner {
    tradingIsEnabled = _enabled⬆;
    emit SwapAndLiquifyEnabledUpdated(_enabled⬆);
}
```

❖ The owner can update the dividend tracker.

```
ftrace | funcSig
function updateDividendTracker(address newAddress⬆) public onlyOwner {
    require(
        newAddress⬆ != address(dividendTracker),
        "SMN: The dividend tracker already has that address"
    );

    SMNTokenDividendTracker newDividendTracker = SMNTokenDividendTracker(
        payable(newAddress⬆)
    );

    require(
        newDividendTracker.owner() == address(this),
        "SMN: The new dividend tracker must be owned by the FLOKIBUSD token contract"
    );

    newDividendTracker.excludeFromDividends(address(newDividendTracker));
    newDividendTracker.excludeFromDividends(address(this));
    newDividendTracker.excludeFromDividends(address(uniswapV2Router));

    emit UpdateDividendTracker(newAddress⬆, address(dividendTracker));

    dividendTracker = newDividendTracker;
}
```

❖ The owner can change buy and sell fees.

```
ftrace | funcSig
function updateBuylFees(
    uint256 reward,
    uint256 marketing,
    uint256 liquidity
) public onlyOwner {
    buyDividendRewardsFee = reward;
    buyMarketingFee = marketing;
    buyLiquidityFee = liquidity;
    buyTotalFees = reward.add(marketing).add(liquidity);
}

ftrace | funcSig
function updateSellFees(
    uint256 reward,
    uint256 marketing,
    uint256 liquidity
) public onlyOwner {
    sellDividendRewardsFee = reward;
    sellMarketingFee = marketing;
    sellLiquidityFee = liquidity;
    sellTotalFees = reward.add(marketing).add(liquidity);
}
```

❖ Owner can change the router address.

```
ftrace | funcSig
function updateUniswapV2Router(address newAddress) public onlyOwner {
    require(
        newAddress != address(uniswapV2Router),
        "SMN: The router already has that address"
    );
    emit UpdateUniswapV2Router(newAddress, address(uniswapV2Router));
    uniswapV2Router = IUniswapV2Router02(newAddress);
}
```

❖ The owner can exclude wallets from the fee.

```
ftrace | funcSig
function excludeFromFees(address account⬆, bool excluded⬆) public onlyOwner {
    require(
        _isExcludedFromFees[account⬆] != excluded⬆,
        "SMN: Account is already the value of 'excluded'"
    );
    _isExcludedFromFees[account⬆] = excluded⬆;

    emit ExcludeFromFees(account⬆, excluded⬆);
}
```

❖ The owner can change gas fees.

```
ftrace | funcSig
function updateGasForProcessing(uint256 newValue⬆) public onlyOwner {
    require(
        newValue⬆ >= 200000 && newValue⬆ <= 500000,
        "SMN: gasForProcessing must be between 200,000 and 500,000"
    );
    require(
        newValue⬆ != gasForProcessing,
        "SMN: Cannot update gasForProcessing to same value"
    );
    emit GasForProcessingUpdated(newValue⬆, gasForProcessing);
    gasForProcessing = newValue⬆;
}
```

❖ The owner can change the minimum reward claim time.

```
ftrace | funcSig
function updateClaimWait(uint256 claimWait⬆) external onlyOwner {
    dividendTracker.updateClaimWait(claimWait⬆);
}
```

Audit conclusion

While conducting the audit of the Safemoonomics Token smart contract, it was observed that there is nothing alarming with the code.