



RugFreeCoins Audit



Aquos Finance Token Smart Contract Security Audit March 21, 2022

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Audit details



Audited project
Aquos FinanceToken



Contract Address
0x093cAC2a497F98b263C4f0ad77c56C819C95057a



Client contact
Aquos FinanceTeam



Blockchain
Binance smart chain



Project website
<https://www.aquos.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 the Aquos Finance Team to perform an audit of the smart contract.

<https://bscscan.com/address/0x093cAC2a497F98b263C4f0ad77c56C819C95057a>

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 improving the security posture of the smart contract by remediating the issues that were identified.

About the project

Aquos Finance is a token built on the Binance Smart Chain that is with an innovative investment use case the main purpose of which is to seek out constant revenue sources, **auto staking protocol backed by Defi 3.0 yield farming** on BSC. Freedom Protocol will bring an unparalleled, fixed APY of **383,025.8%, the highest of its kind** onto the BSC blockchain while imposing profound ease, simplicity, and accessibility upon all Freedom Protocol holders. Each transaction, purchase incurs a 14% fee, and sale incurs a 16% fee.

Features

- **5%** of the buy and sales fees are directed to the Aquos Reserve which helps sustain and back the Staking Rewards provided by the Positive Rebase.
- The **sustainability fee of 2.5% when buying and 4.5% when selling for treasury, which is allocated for marketing** is what allows Aquos Finance to hold the aforementioned promise. Tokens will be swapped into BNB and will be sent to a marketing wallet per transaction. This way, Freedom Protocol 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 4% when buying and selling**, which is a redistribution mechanism that ensures the trading pool always has sufficient liquidity.
- 2.5% of all Aquos Finance tokens traded are burnt in the Fire Pit. The more that is traded, the more get put into the fire causing the fire pit to grow in size, larger and larger through self-fulfilling auto-compounding which in return acts to reduce the circulating supply of Freedom Protocol and keep the Aquos Finance stable.

Tokenomics

14% fee when buying

- 5% of trade goes to freedom insurance fund in BNB
- 2.5% of trade goes to the treasury in BNB
- 2.5% trade goes to the fire pit
- 4% of trade goes to the liquidity pool.

16% fee when selling

- 5% of trade goes to freedom insurance fund in BNB
- 4.5% of trade goes to the treasury in BNB
- 2.5% trade goes to the fire pit.
- 4% of trade goes to the liquidity pool.

Target market and the concept

Target market

- Anyone who's interested in the Crypto space with long-term investment plans.
- Anyone who's ready to earn a passive income by holding tokens.
- Anyone who's interested in trading tokens.
- Anyone who's ready in receiving automatic staking and compound rewards every 15 minutes.
- Anyone who's ready in taking part with the NFT ecosystem.
- Anyone who's ready in taking part in the play to earn games.
- Anyone who's interested in receiving fixed interest of 0.02355% per 15 minutes and 383,025.80% per year.
- Anyone who's interested in taking part with the future plans of the Aquos Finance token.
- Anyone who's interested in making financial transactions with any other party using Aquos Finance as the currency.

Core concept

Reward mechanism

5% of all trading fees are stored in the Aquos Finance fund which helps sustain and back the staking rewards provided by the positive rebase.

Freedom Reserve fund is a separate wallet in the ecosystem. The Aquos Finance fund uses an algorithm that backs the Rebase Rewards and is supported by a portion of the buy and sell trading fees that accrue in the wallet.

In simple terms, the staking rewards (rebase rewards) which are distributed every 15 minutes at a rate of 0.02355% are backed by the Aquos Finance parameter, thus ensuring a high and stable interest rate to Aquos Finance token holders.

Sustainable mechanism

The sustainability fee of 2.5% when buying and 4.5% selling for treasury allocated for marketing is what allows Aquos Finance 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 wallet per transaction. This way, Aquos Finance 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 4% when buying and selling, is a redistribution mechanism that ensures the trading pool always has sufficient liquidity.

2.5% of Aquos Finance tokens from buying and selling traded are burnt in **The Fire Pit**. The more that is traded, the more get put into the fire causing the fire pit to grow in size, larger and larger through self-fulfilling Auto-Compounding, reducing the circulating supply and keeping the Freedom Protocol stable.

Potential to grow with score points

1.	Project efficiency	10/10
2.	Project uniqueness	7/10
3	Information quality	8/10
4	Service quality	9/10
5	System quality	9/10
6	Impact on the community	9/10
7	Impact on the business	9/10
8	Preparing for the future	8/10
Total Points		8.625/10

Contract details

Token contract details for 21st March 2022

Contract name	Aquos
Contract address	0x093cAC2a497F98b263C4f0ad77c56C819C95057a
Token supply	325,000
Token ticker	AQS
Decimals	5
Token holders	1
Transaction count	1
Auto liquidity receiver	0x6882986e94ea8e07708ad948e55843bc9ada3307
Firepit	0x8f0fccac28305323448291499a8cc19794b54d39
Aqs insurance fund receiver	0x2ee6f52f6e2c69f026b005ffe17b30b70c75c12a
Treasury Receiver	0x6d99c037e411bf00c23d624aa5de6dbf84600479
Contract deployer address	0x2550bcA4990892B694f4A9B5432110F0af433CCb
Contract's current owner address	0x6d99c037e411bf00c23d624aa5de6dbf84600479













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










The 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 their visibility and mutability.





















Contract	Type	Bases		
L	Function Name	Visibility	Mutability	Modifiers
SafeMathInt	Library			
L	mul	Internal 		
L	div	Internal 		
L	sub	Internal 		
L	add	Internal 		
L	abs	Internal 		
SafeMath	Library			
L	add	Internal 		
L	sub	Internal 		
L	sub	Internal 		
L	mul	Internal 		
L	div	Internal 		
L	div	Internal 		
L	mod	Internal 		













IERC20	Interface			
L	totalSupply	External !		NO !
L	balanceOf	External !		NO !
L	allowance	External !		NO !
L	transfer	External !		NO !
L	approve	External !		NO !
L	transferFrom	External !		NO !
IPancakeSwap Pair	Interface			
L	name	External !		NO !
L	symbol	External !		NO !
L	decimals	External !		NO !
L	totalSupply	External !		NO !
L	balanceOf	External !		NO !
L	allowance	External !		NO !
L	approve	External !		NO !
L	transfer	External !		NO !
L	transferFrom	External !		NO !
L	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 !
IPancakeSwap Router	Interface			
L	factory	External !		NO !
L	WETH	External !		NO !
L	addLiquidity	External !		NO !
L	addLiquidityETH	External !		NO !



L	removeLiquidity	External !		NO !
L	removeLiquidityETH	External !		NO !
L	removeLiquidityWithPermit	External !		NO !
L	removeLiquidityETHWithPermit	External !		NO !
L	swapExactTokensForTokens	External !		NO !
L	swapTokensForExactTokens	External !		NO !
L	swapExactETHForTokens	External !		NO !
L	swapTokensForExactETH	External !		NO !
L	swapExactTokensForETH	External !		NO !
L	swapETHForExactTokens	External !		NO !
L	quote	External !		NO !
L	getAmountOut	External !		NO !
L	getAmountIn	External !		NO !
L	getAmountsOut	External !		NO !
L	getAmountsIn	External !		NO !
L	removeLiquidityETHSupportingFeeOnTransferTokens	External !		NO !
L	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External !		NO !
L	swapExactTokensForTokensSupportingFeeOnTransferTokens	External !		NO !
L	swapExactETHForTokensSupportingFeeOnTransferTokens	External !		NO !
L	swapExactTokensForETHSupportingFeeOnTransferTokens	External !		NO !

IPancakeSwap Factory	Interface			
L	feeTo	External !		NO !
L	feeToSetter	External !		NO !
L	getPair	External !		NO !
L	allPairs	External !		NO !
L	allPairsLength	External !		NO !
L	createPair	External !		NO !
L	setFeeTo	External !		NO !
L	setFeeToSetter	External !		NO !
Ownable	Implementation			
L		Public !		NO !
L	owner	Public !		NO !
L	isOwner	Public !		NO !
L	renounceOwnership	Public !		onlyOwner
L	transferOwnership	Public !		onlyOwner
L	_transferOwnership	Internal 		
ERC20Detailed	Implementation	IERC20		
L		Public !		NO !
L	name	Public !		NO !

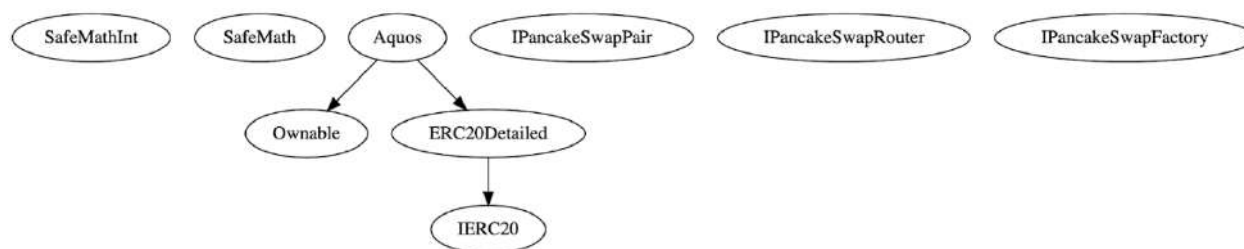
L	symbol	Public !		NO !
L	decimals	Public !		NO !
Aquos	Implementation	ERC20Det ailed, Ownable		
L		Public !		ERC20Det ailed Ownable
L	rebase	Internal 		
L	transfer	External !		validRecipi ent
L	transferFrom	External !		validRecipi ent
L	_basicTransfer	Internal 		
L	_transferFrom	Internal 		
L	takeFee	Internal 		
L	addLiquidity	Internal 		swapping
L	swapBack	Internal 		swapping
L	withdrawAllToTreasury	External !		swapping onlyOwner
L	shouldTakeFee	Internal 		
L	shouldRebase	Internal 		
L	shouldAddLiquidity	Internal 		
L	shouldSwapBack	Internal 		
L	setAutoRebase	External !		onlyOwner

L	setAutoAddLiquidity	External !		onlyOwner
L	allowance	External !		NO !
L	decreaseAllowance	External !		NO !
L	increaseAllowance	External !		NO !
L	approve	External !		NO !
L	checkFeeExempt	External !		NO !
L	getCirculatingSupply	Public !		NO !
L	isNotInSwap	External !		NO !
L	manualSync	External !		NO !
L	setFeeReceivers	External !		onlyOwner
L	getLiquidityBacking	Public !		NO !
L	setWhitelist	External !		onlyOwner
L	setBotBlacklist	External !		onlyOwner
L	setPairAddress	Public !		onlyOwner
L	setLP	External !		onlyOwner
L	totalSupply	External !		NO !
L	balanceOf	External !		NO !
L	isContract	Internal 		
L		External !		NO !

Legend

Symbol	Meaning
	Function can modify state
	Function is payable

Inheritance Hierarchy



Security issue checking status

❖ **High severity issues**

No medium severity issues found.

❖ **Medium severity issues**

No medium severity issues found

❖ **Low severity issues**

No low severity issues found

Owner privileges

- ❖ The owner can withdraw tokens in contract by swapping them into BNB

```
ftrace | funcSig
function withdrawAllToTreasury() external swapping onlyOwner {

    uint256 amountToSwap = _gonBalances[address(this)].div(_gonsPerFragment);
    require( amountToSwap > 0, "There is no token deposited in token contract");
    address[] memory path = new address[](2);
    path[0] = address(this);
    path[1] = router.WETH();
    router.swapExactTokensForETHSupportingFeeOnTransferTokens(
        amountToSwap,
        0,
        path,
        treasuryReceiver,
        block.timestamp
    );
}
```

- ❖ The owner can enable/disable rebase

```
ftrace | funcSig
function setAutoRebase(bool _flag↑) external onlyOwner {
    if (_flag↑) {
        _autoRebase = _flag↑;
        _lastRebasedTime = block.timestamp;
    } else {
        _autoRebase = _flag↑;
    }
}
```

- ❖ The owner can enable/disable auto liquidity adding

```
ftrace | funcSig
function setAutoAddLiquidity(bool _flag↑) external onlyOwner {
    if(_flag↑) {
        _autoAddLiquidity = _flag↑;
        _lastAddLiquidityTime = block.timestamp;
    } else {
        _autoAddLiquidity = _flag↑;
    }
}
```


- ❖ The owner can change all fee receiver wallet address

```
ftrace | funcSig
function setFeeReceivers(
    address _autoLiquidityReceiver↑,
    address _treasuryReceiver↑,
    address _aqInsuranceFundReceiver↑,
    address _firePit↑
) external onlyOwner {
    autoLiquidityReceiver = _autoLiquidityReceiver↑;
    treasuryReceiver = _treasuryReceiver↑;
    aqsInsuranceFundReceiver = _aqInsuranceFundReceiver↑;
    firePit = _firePit↑;
}
```

- ❖ The owner can exclude wallet from fees (once excluded cannot include them again)

```
ftrace | funcSig
function setWhitelist(address _addr↑) external onlyOwner {
    _isFeeExempt[_addr↑] = true;
}
```

- ❖ The owner can add/remove contracts from blacklist

```
ftrace | funcSig
function setBotBlacklist(address _botAddress↑, bool _flag↑) external onlyOwner {
    require(isContract(_botAddress↑), "only contract address, not allowed exteranlly owned account");
    blacklist[_botAddress↑] = _flag↑;
}
```

- ❖ The owner can change pair address and pair contract

```
ftrace | funcSig
function setPairAddress(address _pairAddress↑) public onlyOwner {
    pairAddress = _pairAddress↑;
}

ftrace | funcSig
function setLP(address _address↑) external onlyOwner {
    pairContract = IPancakeSwapPair(_address↑);
}
```

Audit conclusion

RugFreeCoins team has performed in-depth testings, line by line manual code review, and automated audit of the smart contract. The smart contract was analyzed mainly for common smart contract vulnerabilities, exploits, manipulations, and hacks. According to the smart contract audit.

Smart contract functional Status: **PASSED**

Number of risk issues: **0**

Solidity code functional issue level: **PASSED**

Number of owner privileges: **7**

Centralization risk correlated to the active owner: **LOW**

Smart contract active ownership: **YES**