Audit Report

Cryogen

December 2021

Type	BEP20
Address	0x6a73a99fac60c265863307c5a40abf32f0a040ac
Audited by	© coinscope

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Contract Review

Contract Name	BABYTOKEN
Compiler Version	v0.7.6+commit.7338295f
Optimization	200 runs
Licence	MIT
Explorer	https://bscscan.com/token/0x6a73a99fac60c265863307c5a40abf32f0a040ac
Symbol	CRYOGEN
Decimals	18
Total Supply	500,000,000,000,000
Website	https://cryogen.life/

Audit Updates

Initial Audit	7th of December 2021
Corrected	

Contract Analysis

Pass	Description
✓	Contract Owner is not able to mint new tokens
✓	Contract Owner is not able to burn new tokens
✗	Contract Owner is not able to increase fees more than a reasonable percent (25%)
✓	Contract Owner is not able to stop or pause transactions
✓	Contract Owner is not able to transfer tokens from specific address
✗	Contract Owner is not able to increase the amount of liquidity taken by dev wallet more than a reasonable percent
✗	Contract Owner is not able to blacklist wallets from selling
✓	Liquidity Pool is locked

BC - Blacklisted Contracts

Criticality	high
Location	https://bscscan.com/address/0xb6b0f5dd8b12cf7f4a3ebe7e3e6e97b56b02d0ad#code#L2731

Description

The contract owner has the authority to stop contracts from transactions. The owner may take advantage of it by calling the `blacklistAddress` function.

```
function blacklistAddress(address account, bool value) external onlyOwner {
    _isBlacklisted[account] = value;
}
```

Recommendation

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

UIF - Unlimited Increase Fees

Criticality	high
Location	https://bscscan.com/address/0x6a73a99fac60c265863307c5a40abf32f0a040ac#code#L2704, L2709,L 2714

Description

The contract owner has the authority to increase fees without limit. The owner may take advantage of it by calling the fee setter functions like the `setLiquiditFee` with a high percentage value. Even if the final fee is calculated proportional to the `totalFees`, if the user set the `setLiquiditFee` to 100 and all the other fees to 0, then the calculated marketing fee will be

```
function setLiquiditFee(uint256 value) external onlyOwner {
    liquidityFee = value;
    totalFees = tokenRewardsFee.add(liquidityFee).add(marketingFee);
}
```

Recommendation

The contract could embody a check for the maximum acceptable value. In the `initialize` function this check exists. It is missing from the fee setter functions.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

ULTW - Unlimited Liquidity to Team Wallet

Criticality	high
Location	https://bscscan.com/address/0xb6b0f5dd8b12cf7f4a3ebe7e3e6e97b56b02d0ad#code#L2890

Description

The contract owner has the authority to transfer funds without limit to the team wallet. These funds have been swiped from the swap & liquify feature. The owner may take advantage of it by setting a high fee to the marketingFee variable.

```
contractTokenBalance * (marketingFee/totalFees) =
contractTokenBalance * (100/100) =
contractTokenBalance
```

```
uint256 marketingTokens = contractTokenBalance.mul(marketingFee).div(totalFees);
swapAndSendToFee(marketingTokens);
```

Recommendation

The contract could embody a check for the maximum acceptable value.

The team should carefully manage the private keys of the owner’s account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

Contract Diagnostics

Pass	Name
✓	Integer Underflow
✓	Parity Multisig Bug
✓	Callstack Depth Attack
✓	Transaction-Ordering Dependency
✓	Timestamp Dependency
✓	Re-Entrancy

Contract Functions

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
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		
ERC20	Implementation	Context, IERC20		
		Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-

	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	
	_approve	Internal	✓	
	_setupDecimals	Internal	✓	
	_beforeTokenTransfer	Internal	✓	
AddressUpgradeable	Library			
	isContract	Internal		
	sendValue	Internal	✓	

	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionStaticCall	Internal		
	functionStaticCall	Internal		
	_verifyCallResult	Private		
Initializable	Implementation			
	_isConstructor	Private		
ContextUpgradeable	Implementation	Initializable		
	__Context_init	Internal	✓	initializer
	__Context_init_unchained	Internal	✓	initializer
	_msgSender	Internal		
	_msgData	Internal		
IERC20Upgradeable	Interface			

	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
SafeMathUpgradeable	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		
ERC20Upgradeable	Implementation	Initializable, ContextUpgradeable, IERC20Upgradeable		
	__ERC20_init	Internal	✓	initializer
	__ERC20_init_unchained	Internal	✓	initializer
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-

	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	
	_approve	Internal	✓	
	_setupDecimals	Internal	✓	
	_beforeTokenTransfer	Internal	✓	
Ownable	Implementation	Context		
		Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
OwnableUpgradeable	Implementation	Initializable, ContextUpgradeable		
	__Ownable_init	Internal	✓	initializer

	__Ownable_init_unchained	Internal	✓	initializer
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
Clones	Library			
	clone	Internal	✓	
	cloneDeterministic	Internal	✓	
	predictDeterministicAddress	Internal		
	predictDeterministicAddress	Internal		
IUniswapV2 Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-

	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
IUniswapV2 Router01	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	Payable	-

	quote	External		-
	getAmountOut	External		-
	getAmountIn	External		-
	getAmountsOut	External		-
	getAmountsIn	External		-
IUniswapV2 Router02	Interface	IUniswap V2Router 01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupporting FeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFee OnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOn TransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOn TransferTokens	External	✓	-
IUniswapV2 Pair	Interface			
	name	External		-
	symbol	External		-

	decimals	External		-
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	DOMAIN_SEPARATOR	External		-
	PERMIT_TYPEHASH	External		-
	nonces	External		-
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-
	token0	External		-
	token1	External		-
	getReserves	External		-
	price0CumulativeLast	External		-
	price1CumulativeLast	External		-
	kLast	External		-

	mint	External	✓	-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
SafeMathInt	Library			
	mul	Internal		
	div	Internal		
	sub	Internal		
	add	Internal		
	abs	Internal		
	toUint256Safe	Internal		
SafeMathUint	Library			
	toInt256Safe	Internal		

IterableMapping	Library			
	get	Public		-
	getIndexOfKey	Public		-
	getKeyAtIndex	Public		-
	size	Public		-
	set	Public	✓	-
	remove	Public	✓	-
IBabyToken	Interface			
	initialize	External	✓	-
DividendPayingTokenInterface	Interface			
	dividendOf	External		-
	withdrawDividend	External	✓	-
DividendPayingTokenOptionalInterface	Interface			
	withdrawableDividendOf	External		-

	withdrawnDividendOf	External		-
	accumulativeDividendOf	External		-
DividendPayingToken	Implementation	ERC20Upgradeable, OwnableUpgradeable, DividendPayingTokenInterface, DividendPayingTokenOptionalInterface		
	__DividendPayingToken_init	Internal	✓	initializer
	distributeCAKEDividends	Public	✓	onlyOwner
	withdrawDividend	Public	✓	-
	_withdrawDividendOfUser	Internal	✓	
	dividendOf	Public		-
	withdrawableDividendOf	Public		-
	withdrawnDividendOf	Public		-
	accumulativeDividendOf	Public		-
	_transfer	Internal	✓	
	_mint	Internal	✓	

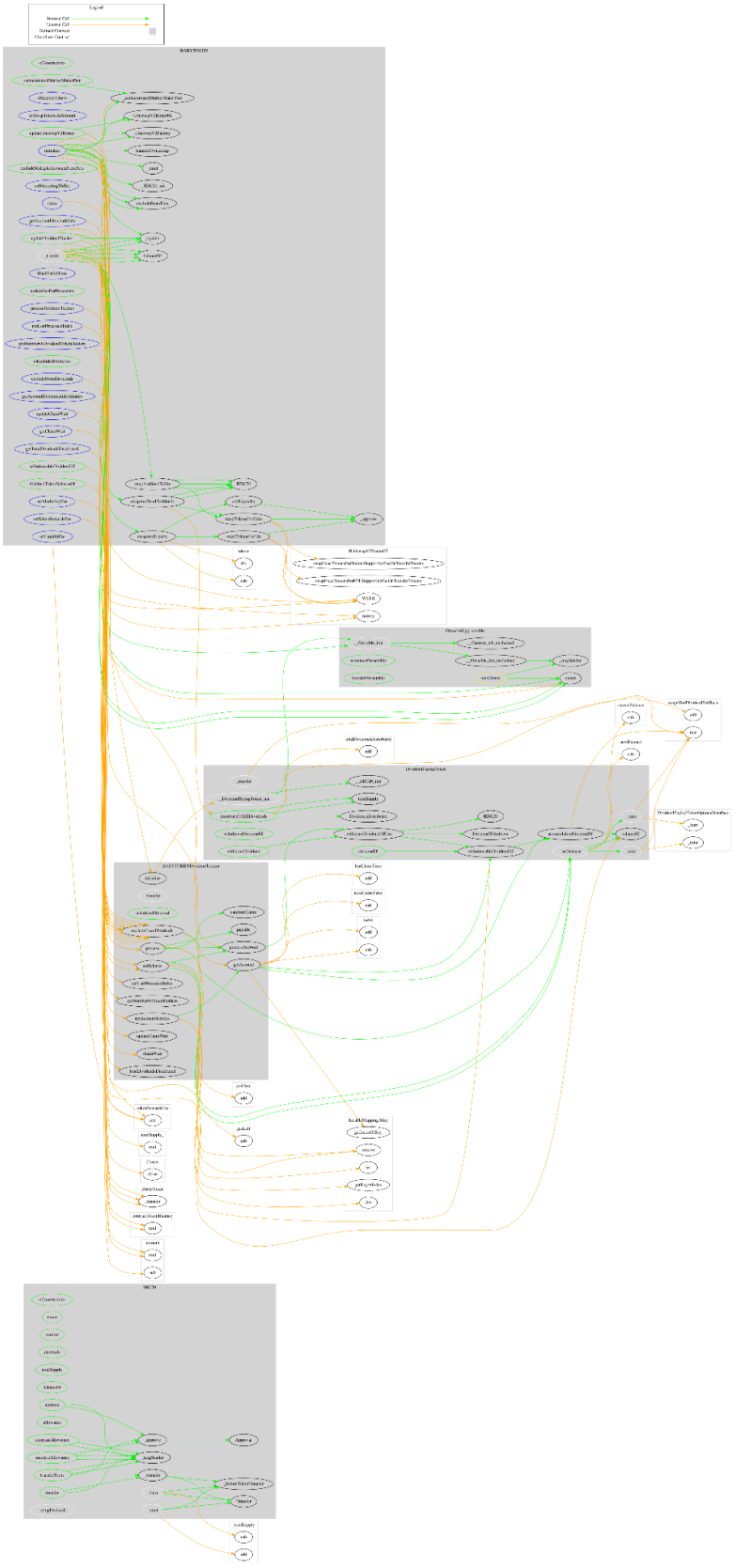
	_burn	Internal	✓	
	_setBalance	Internal	✓	
BABYTOKEN	Implementation	ERC20Upgradeable, OwnableUpgradeable, IBabyToken		
		Public	✓	-
	initialize	External	✓	initializer
		External	Payable	-
	setSwapTokensAtAmount	External	✓	onlyOwner
	updateDividendTracker	Public	✓	onlyOwner
	updateUniswapV2Router	Public	✓	onlyOwner
	excludeFromFees	Public	✓	onlyOwner
	excludeMultipleAccountsFromFees	Public	✓	onlyOwner
	setMarketingWallet	External	✓	onlyOwner
	setTokenRewardsFee	External	✓	onlyOwner
	setLiquiditFee	External	✓	onlyOwner
	setMarketingFee	External	✓	onlyOwner

	setAutomatedMarketMakerPair	Public	✓	onlyOwner
	blacklistAddress	External	✓	onlyOwner
	_setAutomatedMarketMakerPair	Private	✓	
	updateGasForProcessing	Public	✓	onlyOwner
	updateClaimWait	External	✓	onlyOwner
	getClaimWait	External		-
	getTotalDividendsDistributed	External		-
	isExcludedFromFees	Public		-
	withdrawableDividendOf	Public		-
	dividendTokenBalanceOf	Public		-
	excludeFromDividends	External	✓	onlyOwner
	getAccountDividendsInfo	External		-
	getAccountDividendsInfoAtIndex	External		-
	processDividendTracker	External	✓	-
	claim	External	✓	-
	getLastProcessedIndex	External		-
	getNumberOfDividendTokenHolders	External		-
	_transfer	Internal	✓	
	swapAndSendToFee	Private	✓	

	swapAndLiquify	Private	✓	
	swapTokensForEth	Private	✓	
	swapTokensForCake	Private	✓	
	addLiquidity	Private	✓	
	swapAndSendDividends	Private	✓	
BABYTOKENDividendTracker	Implementation	Ownable Upgradeable, DividendPayingToken		
	initialize	External	✓	initializer
	_transfer	Internal		
	withdrawDividend	Public		-
	excludeFromDividends	External	✓	onlyOwner
	updateClaimWait	External	✓	onlyOwner
	getLastProcessedIndex	External		-
	getNumberOfTokenHolders	External		-
	getAccount	Public		-
	getAccountAtIndex	Public		-
	canAutoClaim	Private		

	setBalance	External	✓	onlyOwner
	process	Public	✓	-
	processAccount	Public	✓	onlyOwner

Contract Flow



Domain Info

Domain Name	cryogen.life
Registry Domain ID	83fe1f4c271742c691bc029324596439-DONUTS
Registrar WHOIS Server	whois.godaddy.com/
Registrar URL	http://www.godaddy.com/domains/search.aspx?ci=8990
Updated Date	2021-10-26T19:16:03Z
Creation Date	2021-09-01T15:06:03Z
Registry Expiry Date	2025-09-01T15:06:03Z
Registrar	GoDaddy.com, LLC
Registrar IANA ID	146

The domain has been created one month before the creation of the audit. It will expire in 4 years.

There is no public billing information, the creator is protected by the privacy settings.

Summary

Cryogen is an interesting project with a friendly and growing community. They are aiming to be at the forefront of next generation Web3.0 application development. The smart contract contains a token distribution feature that shares $CAKE to the users proportional to their holding. The smart contract analysis reported 3 critical issues, the owner can manipulate fees without limitations, the owner can manipulate liquidity taken for the team wallet without any limitations and the owner has the ability to blacklist wallets from selling. A multi-wallet signing pattern or renouncing the ownership will eliminate all the contract threats. Finally, KYC or doxxing the team is advised in order to gain confidence and trust from the community.

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Coinscope is aiming to make crypto discoverable and efficient globally. It provides all the essential tools to assist users draw their own conclusions.

The Coinscope.co team

https://www.coinscope.co