



TechRate
AUDIT COMPANY

Smart Contract Security Audit

TechRate

December, 2021

Audit Details



Audited project

Belka



Deployer address

0x66629195f6a31d24a7f1c732865dda612ee1db71



Client contacts:

Belka team



Blockchain

Binance Smart Chain



Project website:

<https://belkaproject.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 Belka to perform an audit of smart contracts:

<https://bscscan.com/address/0x1E7681E86027D8556B0c7eFC7bA213B8940e2788#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 10.12.2021

Contract name	Belka
Contract address	0x1E7681E86027D8556B0c7eFC7bA213B8940e2788
Total supply	1,000,000,000
Token ticker	BLK
Decimals	9
Token holders	1,606
Transactions count	3,857
Top 100 holders dominance	89.90%
Buy fee	15
Sell fee	15
Project wallet	0xe36d237b56351ede2ba147db3e3c74bb166cfb1b
Operations wallet	0x7e481f71e5e9fdeecbed7ce70c5ae12d5f2031cd
Contract deployer address	0x66629195f6a31d24a7f1c732865dda612ee1db71
Contract's current owner address	0x66629195f6a31d24a7f1c732865dda612ee1db71

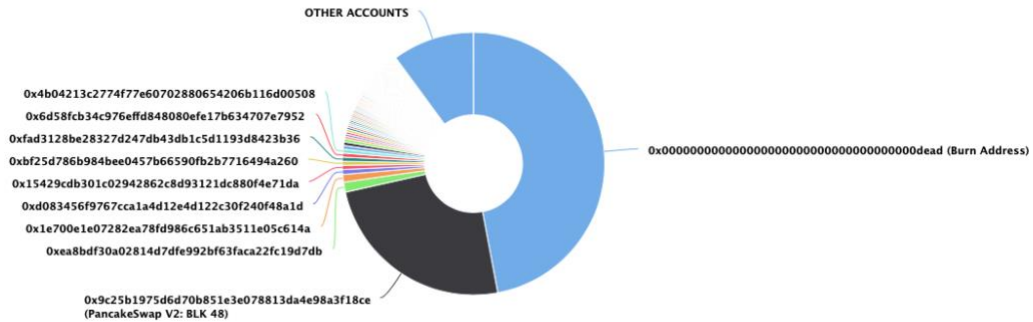
Belka Token Distribution

The top 100 holders collectively own 89.90% (898,960,430.41 Tokens) of Belka

Token Total Supply: 1,000,000,000.00 Token | Total Token Holders: 1,606

Belka Top 100 Token Holders

Source: BscScan.com



(A total of 898,960,430.41 tokens held by the top 100 accounts from the total supply of 1,000,000,000.00 token)

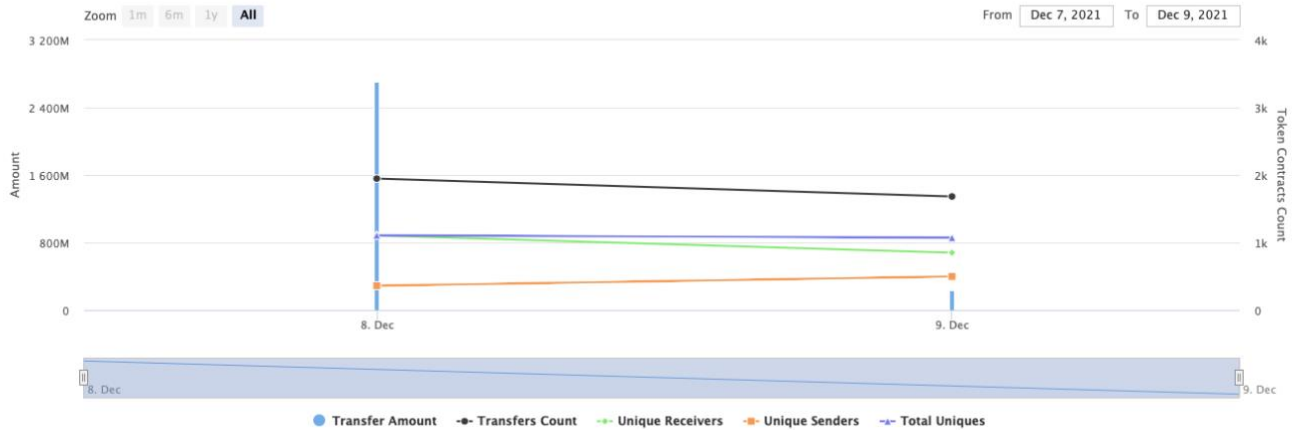
Belka Contract Interaction Details

Time Series: Token Contract Overview


Wed 8, Dec 2021 - Thu 9, Dec 2021

Token Contract 0x1E7681E86027D855680c7eFC7bA21388940e2788 (Belka)

Source: BscScan.com



Belka Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	Burn Address	470,471,910.66169603	47.0472%
2	 PancakeSwap V2: BLK 48	244,718,491.31945028	24.4718%
3	0xea8bdf30a02814d7dfe992bf63faca22fc19d7db	12,319,850.141698222	1.2320%
4	0x1e700e1e07282ea78fd986c651ab3511e05c614a	9,424,007.788946773	0.9424%
5	0xd083456f9767cca1a4d12e4d122c30f240f48a1d	5,976,814.141581166	0.5977%
6	0x15429cdb301c02942862c8d93121dc880f4e71da	5,060,031.983859756	0.5060%
7	0xbf25d786b984bee0457b66590fb2b7716494a260	5,004,750.632443866	0.5005%
8	0xfad3128be28327d247db43db1c5d1193d8423b36	5,004,750.632443866	0.5005%
9	0x6d58fcb34c976effd848080efe17b634707e7952	5,004,750.632443866	0.5005%
10	0x4b04213c2774f77e60702880654206b116d00508	4,760,605.406158275	0.4761%



Contract functions details

+ Context

- [Int] _msgSender

+ [Int] IERC20

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

+ [Lib] SafeMath

- [Int] add
- [Int] sub
- [Int] sub
- [Int] mul
- [Int] div
- [Int] div

+ Ownable (Context)

- [Pub] <Constructor> #
- [Pub] owner
- [Pub] renounceOwnership #
 - modifiers: onlyOwner
- [Pub] transferOwnership #
 - modifiers: onlyOwner

+ [Int] IUniswapV2Factory

- [Ext] createPair #

+ [Int] IUniswapV2Router02

- [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #
- [Ext] factory
- [Ext] WETH
- [Ext] addLiquidityETH (\$)

+ Belka (Context, IERC20, Ownable)

- [Pub] <Constructor> #
- [Pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Ext] setIsExcludedFromFee #
 - modifiers: onlyOwner
- [Pub] isExcludedFromFee
- [Ext] setProjectWallet #

- modifiers: onlyOwner
- [Ext] setBuybackWallet #
 - modifiers: onlyOwner
- [Ext] setMarketingWallet #
 - modifiers: onlyOwner
- [Ext] setOperationsWallet #
 - modifiers: onlyOwner
- [Prv] tokenFromReflection
- [Prv] removeAllFee #
- [Prv] restoreAllFee #
- [Ext] setRemoveAllFee #
 - modifiers: onlyOwner
- [Ext] setRestoreAllFee #
 - modifiers: onlyOwner
- [Prv] _approve #
- [Prv] _transfer #
- [Prv] swapTokensForEth #
 - modifiers: lockTheSwap
- [Prv] _tokenTransfer #
- [Prv] _transferStandard #
- [Prv] _reflectFee #
- [Prv] _calculateReflectTransfer #
- [Ext] <Fallback> (\$)
- [Prv] _getRate
- [Prv] _getCurrentSupply
- [Ext] setMaxTxPercent #
 - modifiers: onlyOwner
- [Ext] setBuyFee #
 - modifiers: onlyOwner
- [Ext] setSellFee #
 - modifiers: onlyOwner
- [Ext] withdrawResidualBnb #
 - modifiers: onlyOwner
- [Ext] withdrawResidualErc20 #
 - 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.	Passed
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

No low severity issues found.

Notes:

- Operations wallet get the rest of swapped amount.

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

- Owner can exclude from the fee.
- Owner can change project, buyback, marketing and operations wallet.
- Owner can remove and restore fees.
- Owner can change the maximum transaction amount.
- Owner can change buy and sell fees.
- Owner can withdraw contract tokens and BNBs.

Conclusion

Smart contracts do not contain high severity issues! Liquidity pair contract's security is not checked due to out of scope.

Liquidity locking details are provided by the team:

<https://www.pinksale.finance/#/pinklock/record/5256?chain=BSC>

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.



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