



TechRate
AUDIT COMPANY

Smart Contract Security Audit

Audit Details



Audited project

BabyKraken



Deployer address

0x63bf01232178A39C45068135484427b66E0670e5



Client contacts:

BabyKraken team



Blockchain

Binance Smart Chain



Project website:

<https://www.kraken.baby/>

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 BabyKraken to perform an audit of smart contracts:

<https://bscscan.com/address/0x4D79DA6F390D9E9d475802a693353C3715b7Bd75#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 29.06.2021

Contract name	BabyKraken
Contract address	0x4D79DA6F390D9E9d475802a693353C3715b7Bd75
Total supply	1,000,000,000,000,000
Token ticker	KRAKBABY
Decimals	9
Token holders	6,459
Transactions count	30,302
Top 100 holders dominance	66.18%
Liquidity fee	10
Tax fee	2
Total fees	203820591650053069163432
Uniswap V2 pair	0x4b903f3b2c849a2d35f646da3b1dd3b06b00748e
Contract deployer address	0x63bf01232178A39C45068135484427b66E0670e5
Contract's current owner address	0x08a7d2ba4565b3aca82b0f0545c514a43556a6c9

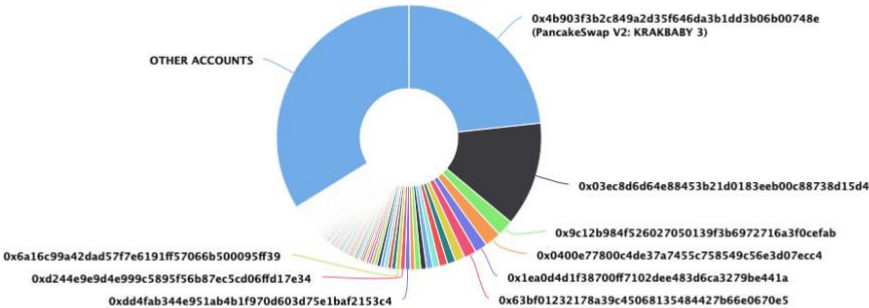
BabyKraken Token Distribution

The top 100 holders collectively own 66.18%
(661,812,019,927,852.00 Tokens) of BabyKraken | t.me/BabyKrakenBSC

Token Total Supply: 1,000,000,000,000.00 Token | Total Token Holders: 6,459

BabyKraken | t.me/BabyKrakenBSC Top 100 Token Holders

Source: BscScan.com



(A total of 661,812,019,927,852.00 tokens held by the top 100 accounts from the total supply of 1,000,000,000,000.00 token)

BabyKraken Contract Interaction Details

Time Series: Token Contract Overview






Sat 26, Jun 2021 - Mon 28, Jun 2021

Token Contract 0x4D79DA6F390D9E9d475802a693353C3715b7Bd75 (BabyKraken | t.me/BabyKrakenBSC)

Source: BscScan.com



BabyKraken Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	 PancakeSwap V2: KRAKBABY 3	232,875,321,683,733.296048082	23.2875%
2	 0x03ec8d6d64e88453b21d0183eeb00c88738d15d4	127,729,596,957,990.283632959	12.7730%
3	 0x9c12b984f526027050139f3b6972716a3f0cefab	20,000,000,000,000	2.0000%
4	 0x0400e77800c4de37a7455c758549c56e3d07ecc4	20,000,000,000,000	2.0000%
5	0x1ea0d4d1f38700ff7102dee483d6ca3279be441a	15,278,111,544,074.093316805	1.5278%
6	0x63bf01232178a39c45068135484427b66e0670e5	14,987,217,248,452.032907241	1.4987%
7	0xfc5bb64c56a879983d7351b4d2ab3920a829f62d	12,101,212,228,822.762546735	1.2101%
8	0x548e03c19a175a66912685f71e157706fee6a04d	10,000,741,942,820.228660645	1.0001%
9	 0x17c3c909a14ee5c88864d87ab8826a57a1708af3	10,000,000,000,000	1.0000%
10	0xe69239137c993e36f0dd10475bf312f5f3b9165d	8,078,021,625,295.022857748	0.8078%



Contract functions details

+ Context

- [Int] _msgSender
- [Int] _msgData

+ [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
- [Int] mod
- [Int] mod

+ [Lib] Address

- [Int] isContract
- [Int] sendValue #
- [Int] functionCall #
- [Int] functionCall #
- [Int] functionCallWithValue #
- [Int] functionCallWithValue #
- [Prv] _functionCallWithValue #

+ Ownable (Context)

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

+ [Int] IUniswapV2Factory

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

+ [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] burn #
 - [Ext] swap #
 - [Ext] skim #
 - [Ext] sync #
 - [Ext] initialize #
- + [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 #

+ **BabyKraken** (Context, IERC20, Ownable)

- [Pub] <Constructor> #
- [Pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #
- [Pub] decreaseAllowance #
- [Pub] isExcludedFromReward
- [Pub] totalFees
- [Pub] minimumTokensBeforeSwapAmount
- [Pub] buyBackUpperLimitAmount
- [Pub] deliver #
- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Pub] excludeFromReward #
 - modifiers: onlyOwner
- [Ext] includeInReward #
 - modifiers: onlyOwner
- [Prv] _approve #
- [Prv] _transfer #
- [Prv] swapAndLiquify #
 - modifiers: lockTheSwap
- [Prv] swapTokens #
 - modifiers: lockTheSwap
- [Prv] buyBackTokens #
 - modifiers: lockTheSwap
- [Prv] swapTokensForEth #
- [Prv] swapETHForTokens #
- [Prv] addLiquidity #
- [Prv] _tokenTransfer #
- [Prv] _transferStandard #
- [Prv] _transferToExcluded #
- [Prv] _transferFromExcluded #
- [Prv] _transferBothExcluded #
- [Prv] _reflectFee #
- [Prv] _getValues
- [Prv] _getTValues
- [Prv] _getRValues
- [Prv] _getRate
- [Prv] _getCurrentSupply
- [Prv] _getTokenSwapRate
- [Prv] _takeLiquidity #
- [Prv] calculateTaxFee
- [Prv] calculateLiquidityFee
- [Prv] removeAllFee #
- [Prv] restoreAllFee #
- [Pub] isExcludedFromFee
- [Pub] isExcludedFromMaxTxAmount
- [Pub] excludeFromFee #

- modifiers: onlyOwner
- [Pub] excludeFromMaxTxAmount #
 - modifiers: onlyOwner
- [Pub] includeInFee #
 - modifiers: onlyOwner
- [Ext] setTaxFeePercent #
 - modifiers: onlyOwner
- [Ext] setLiquidityFeePercent #
 - modifiers: onlyOwner
- [Ext] setMaxTxAmount #
 - modifiers: onlyOwner
- [Ext] setMarketingDivisor #
 - modifiers: onlyOwner
- [Ext] setNumTokensSellToAddToLiquidity #
 - modifiers: onlyOwner
- [Ext] setBuybackUpperLimit #
 - modifiers: onlyOwner
- [Ext] setMarketingAddress #
 - modifiers: onlyOwner
- [Pub] setSwapAndLiquifyEnabled #
 - modifiers: onlyOwner
- [Pub] setBuyBackEnabled #
 - modifiers: onlyOwner
- [Ext] prepareForPreSale #
 - modifiers: onlyOwner
- [Ext] afterPreSale #
 - modifiers: onlyOwner
- [Prv] transferToAddressETH #
- [Ext] <Fallback> (\$)

(\$)= 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.	Low issues
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 `includeInReward()` uses the loop to find and remove addresses from the `_excluded` list. Function will be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

```
function includeInReward(address account) external onlyOwner() {
    require(!_isExcluded[account], "Account is already excluded");
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_excluded[i] == account) {
            _excluded[i] = _excluded[_excluded.length - 1];
            _tOwned[account] = 0;
            _isExcluded[account] = false;
            _excluded.pop();
            break;
        }
    }
}
```

- The function `_getCurrentSupply` also uses the loop for evaluating total supply. It also could be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

```
function _getCurrentSupply() private view returns (uint256, uint256) {
    uint256 rSupply = _rTotal;
    uint256 tSupply = _tTotal;
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (
            _rOwned[_excluded[i]] > rSupply ||
            _tOwned[_excluded[i]] > tSupply
        ) return (_rTotal, _tTotal);
        rSupply = rSupply.sub(_rOwned[_excluded[i]]);
        tSupply = tSupply.sub(_tOwned[_excluded[i]]);
    }
    if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
    return (rSupply, tSupply);
}
```

Recommendation:

Check that the excluded array length is not too big.

2. Division as first operation

Issue:

- The function `_getTokenSwapRate()` divides `Res0` by `Res1` and multiplies it with the 10^{18} . By doing division first, we can get rounding errors.

Recommendation:

By doing all our multiplications first, we mitigate rounding related issues as much as possible.

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

- Owner can change tax and liquidity fees.

```
ftrace | funcSig
function setTaxFeePercent(uint256 taxFee↑) external onlyOwner() {
    _taxFee = taxFee↑;
}

ftrace | funcSig
function setLiquidityFeePercent(uint256 liquidityFee↑) external onlyOwner() {
    _liquidityFee = liquidityFee↑;
}
```

- Owner can change maximum transaction amount.

```
ftrace | funcSig
function setMaxTxAmount(uint256 maxTxAmount↑) external onlyOwner() {
    _maxTxAmount = maxTxAmount↑;
}
```

- Owner can exclude from the fee.

```
function excludeFromFee(address account↑) public onlyOwner {
    _isExcludedFromFee[account↑] = true;
}
```

- Owner can change marketingDivisor.

```
ftrace | funcSig
function setMarketingDivisor(uint256 divisor↑) external onlyOwner() {
    marketingDivisor = divisor↑;
}
```


- Owner can change minimum number of tokens to add to liquidity.

```
ftrace | funcSig
function setNumTokensSellToAddToLiquidity(uint256 _minimumTokensBeforeSwap↑) external onlyOwner() {
    minimumTokensBeforeSwap = _minimumTokensBeforeSwap↑;
}
```

- Owner can change buyBackUpperLimit.

```
ftrace | funcSig
function setBuybackUpperLimit(uint256 buyBackLimit↑) external onlyOwner() {
    buyBackUpperLimit = buyBackLimit↑ * 10**18;
}
```

- Owner can change marketing address.

```
ftrace | funcSig
function setMarketingAddress(address _marketingAddress↑) external onlyOwner() {
    marketingAddress = payable(_marketingAddress↑);
}
```

- Owner can enable and disable buyBack.

```
ftrace | funcSig
function setBuyBackEnabled(bool _enabled↑) public onlyOwner {
    buyBackEnabled = _enabled↑;
    emit BuyBackEnabledUpdated(_enabled↑);
}
```

- Owner can exclude from max transaction amount restriction.

```
function excludeFromMaxTxAmount(address account↑) public onlyOwner {
    _isExcludedFromMaxTxAmount[account↑] = true;
}
```

- Owner can enable before and after presale modes.

```
ftrace | funcSig
function prepareForPreSale() external onlyOwner {
    setSwapAndLiquifyEnabled(false);
    _taxFee = 0;
    _liquidityFee = 0;
    _maxTxAmount = 1000000000 * 10**6 * 10**9;
}

ftrace | funcSig
function afterPreSale() external onlyOwner {
    setSwapAndLiquifyEnabled(true);
    _taxFee = 2;
    _liquidityFee = 9;
    _maxTxAmount = 3000000 * 10**6 * 10**9;
}
```

Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope. 1/5 of the liquidity goes to marketing address. The further transfers and operations with the funds raise are not related to this particular contract.

Liquidity locking details provided by the team:

<https://dxsale.app/app/pages/defipresale?saleID=4630&chain=BSC>

“1620\$ in USDT have been sent”:

<https://bscscan.com/tx/0xdc1d68a404424f9417c50b91886dcaefa7d2034991448d70fd3e08e5e5bdf733>

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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