



SMART CONTRACT SECURITY AUDIT

BABYGROOT

August, 2021

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Disclaimer

This is a comprehensive report based on our automated and manual examination of cybersecurity vulnerabilities and framework flaws. We took into consideration smart contract based algorithms, as well. Reading the full analysis report is essential to build your understanding of project's security level. It is crucial to take note, though we have done our best to perform this analysis and report, that you should not rely on the our research and cannot claim what it states or how we created it. Before making any judgments, you have to conduct your own independent research. We will discuss this in more depth in the following disclaimer - please read it fully.

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Security analysis is based only on the smart contracts. No applications or operations were reviewed for security. No product code has been reviewed.

Procedure

Our analysis contains following steps:

1. Project Analysis;
2. Manual analysis of smart contracts:
 - Deploying smart contracts on any of the network(Ropsten/Rinkeby) using Remix IDE
 - Hashes of all transaction will be recorded
 - Behaviour of functions and gas consumption is noted, as well.
3. Unit Testing:
 - Smart contract functions will be unit tested on multiple parameters and under multiple conditions to ensure that all paths of functions are functioning as intended.
 - In this phase intended behaviour of smart contract is verified.
 - In this phase, we would also ensure that smart contract functions are not consuming unnecessary gas.
 - Gas limits of functions will be verified in this stage.
4. Automated Testing:
 - Mythril
 - Oyente
 - Manticore
 - Solgraph

Terminology

We categorize the finding into 4 categories based on their vulnerability:

- Low-severity issue — less important, must be analyzed
- Medium-severity issue — important, needs to be analyzed and fixed
- High-severity issue — important, might cause vulnerabilities, must be analyzed and fixed
- Critical-severity issue — serious bug causes, must be analyzed and fixed.

Limitations

The security audit of Smart Contract cannot cover all vulnerabilities. Even if no vulnerabilities are detected in the audit, there is no guarantee that future smart contracts are safe. Smart contracts are in most cases safeguarded against specific sorts of attacks. In order to find as many flaws as possible, we carried out a comprehensive smart contract audit. Audit is a document that is not legally binding and guarantees nothing.

Token Contract Details for 03.08.2021

Contract Name: **BabyGroot**

Deployer address: **0x9E4e736A6eb42397Be3d084956D623963e57AD38**

Total Supply: **1,000,000,000,000,000**

Token Tracker: **BABYGROOT**

Decimals: **9**

Token holders: **1**

Transactions count: **1**

Top 100 holders dominance: **100%**

Contract deployer address:
0x9E4e736A6eb42397Be3d084956D623963e57AD38

Audit Details



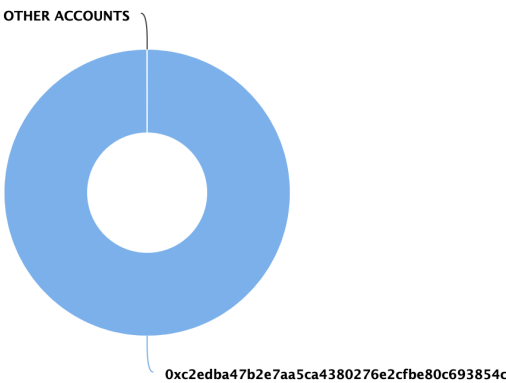
Project Name: **BABYGROOT**

Language: **Solidity**

Blockchain: **Binance Smart Chain**

Project Website: **babygroot.co.uk**

BABYGROOT Token Distribution



BABYGROOT Top 10 Holders

Rank	Address	Quantity (Token)	Percentage
1	0xc2edba47b2e7aa5ca4380276e2cfbe80c693854c	1,000,000,000,000,000	100.0000%

Vulnerabilities checking Status

Issue Description	Checking Status
Compiler Errors	Completed
Delays in Data Delivery	Completed
Re-entrancy	Completed
Transaction-Ordering Dependence	Completed
Timestamp Dependence	Completed
Shadowing State Variables	Completed
DoS with Failed Call	Completed
DoS with Block Gas Limit	Completed
Outdated Compiler Version	Completed
Assert Violation	Completed
Use of Deprecated Solidity Functions	Completed
Integer Overflow and Underflow	Completed
Function Default Visibility	Completed
Centralization / Privilege	Low-issues
Math Accuracy	Completed
Design Logic	Completed
Fallback Function Security	Completed
Cross-function Race Conditions	Completed
Safe Zeppelin Module	Completed

Security Issues

1) **Logical issue:**

The error message in `require(!_isExcluded[account], "Account is already excluded")` does not describe the error correctly.

Recommendation:

The message "Account is already excluded" can be changed to "Account is not excluded".

2) **Centralization / Privilege issue:**

The `addLiquidity` function calls the `uniswapV2Router.addLiquidityETH` function with the `to` address specified as `owner()` for acquiring the generated LP tokens from the BABYGROOT-BNB pool. As a result, over time the `_owner` address will accumulate a significant portion of LP tokens. If the `_owner` is an EOA (Externally Owned Account), mishandling of its private key can have devastating consequences to the project as a whole.

Recommendation:

We advise the `to` address of the `uniswapV2Router.addLiquidityETH` function call to be replaced by the contract itself, i.e. `address(this)`, and to restrict the management of the LP tokens within the scope of the contract's business logic. This will also protect the LP tokens from being stolen if the `_owner` account is compromised. In general, we strongly recommend centralized privileges or roles in the protocol to be improved via a decentralized mechanism or via smart-contract based accounts with enhanced security practices, f.e. Multisignature wallets.

Conclusion

Low issues exist within smart contracts. Smart contracts are free from any critical or high-severity issues.

NOTE: Please check the disclaimer above and note, that audit makes no statements or warranties on business model, investment attractiveness or code sustainability.