



# SMART CONTRACT SECURITY AUDIT

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WATCHTOWER

# DISCLAIMER

Watchtower has completed this report to provide a summary of the Smart Contract functions, and any security, dependency or cybersecurity vulnerabilities. This is often a constrained report on our discoveries based on our investigation and understanding of the current programming versions as at the date of this report. In order to understand the full scope of our analysis, it is vital for you to review the complete report. Although we have done our best in conducting our investigation and creating this report, it is vital to note that you should not depend on this report and cannot make any claim against Watchtower or its Subsidiaries and Team members on the premise of what has or has not been included in the report. Please remember to conduct your own independent examinations before making any investment choices. We do not provide investment advice or in any way claim to determine if the project will be successful or not.

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## ABOUT THE AUDITOR:

Watchtower is an Anti-Scam Token Utility which reviews Smart Contracts and Token information to Identify Rug Pull and Honey Pot scamming activity.

Watchtowers Development Team consists of a number of Smart Contract creators, Auditors Developers and Blockchain experts.

Watchtowers Website Scanner reviews a number of Risk factors to provide an adequate Risk summary of token projects.

In Addition to this the team also helps with Creation of Smart Contracts for legitimate projects, Audits and Promotion.





# OVERVIEW

**Watchtower was commissioned by HodlerHeroes NFT to complete a Smart Contract audit.**

**The objective of the Audit is to achieve the following:**

- Review the Project and experience and Development team
- Ensure that the Smart Contract functions are necessary and operate as intended.
- Identify any vulnerabilities in the Smart Contract code.

**DISCLAIMER:** This Audit is intended to inform about token Contract Risks, the result does not imply an endorsement or provide financial advice in any way, All investments are made at your own risk.

(<https://www.cryptowatchtower.io/>)



# SMART CONTRACT REVIEW



**Contract Created on the 17th October 2021      Solidity compiler v0.8.7**

Contract name	HodlerHeroes NFT
Contract address	0x882fd7db274b32dd0361931c406f7cf058bac822
Total supply	1,000,000,000
Token ticker	HHNFT
Decimals	18
Token holders	10714
Transactions count	2
Top 5 holders dominance	~10%
Tax fee	6.1%
Total fees	6.1% ~ BUY / 18.3% ~ SELL
Contract deployer address	0x396a3bd226236192fed4a4d978b99b82c88baeb3
Contract's current owner address	0x396a3bd226236192fed4a4d978b99b82c88baeb3



# Project Overview



## Project Details: (Website: <https://hodlerheroes.org/en>)

Hodler Heroes is a new NFT project where holders will be able to buy and collect NFT heroes designed in pixel art. Moreover, a lot of attractive and innovative features are introduced into this multi-token ecosystem.

### Tokenomics:

Supply: 1,000,000,000 (1 Billion)

**6.1% Tax for Buys and 18.3% for Sells comprising of:**

- BUY
  - 1.25% NFT Treasury
  - 2.25% Marketing
  - 1.25% HHNFT Rewards (BEP20)
  - 1.25% HHNFT Rewards (NFT)
  - 0.10% BuyBack and Burns
- SELL
  - 3.75% NFT Treasury
  - 6.75% Marketing
  - 3.75% HHNFT Rewards (BEP20)
  - 3.75% HHNFT Rewards (NFT)
  - 0.30% BuyBack and Burns

### Team Review:

Watchtower reviewed a number of factors including the teams background and Cryptocurrency experience, social media interaction and availability, project momentum, token risks and community trust score.

The HodlerHeroes NFT team have a very good understanding of Cryptocurrency with strong social media platforms and a healthy number of holders.

### TEAM DOXXED/KYC:

Watchtower is not aware of the team being Doxxed.



# CONTRACT FUNCTIONS DETAILS

## Functions (Public)

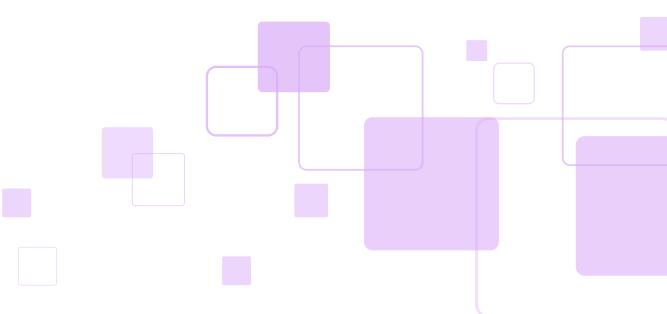
This contract has 50 available public functions which the owner can call.  
They can be viewed on BSC Scan.

### LINK:

<https://bscscan.com/token/0x882fd7db274b32dd0361931c406f7cf058bac822#writeContract>

### Function risks:

-No scam functions identified.



# Contract Stress Test

## Imported Libraries / Interfaces

- Context
- Ownable
- IERC20
- IERC20 Metadata
- DividendPayingTokenOptionalInterface
- DividendPayingTokenInterface
- SafeMathInt
- SafeMathUint
- SafeMath
- ERC20
- DividendPayingToken (<https://github.com/roger-wu>) + edits
- IterableMapping
- IDEXFactory
- IDEXRouter

## Overview

1. ADDITION OF COMMENTS:	8
2. CALL STACK DEPTH ATTACK:	10
3. TIME STAMP DEPENDENCY:	10
4. PARTY MULTISIG BUG:	10
5. USE OF LIBRARIES/DEPENDENCIES (FROM TRUSTED SOURCES):	8
a. TRANSACTION-ORDERING DEPENDENCY:	10
6. ACCESS CONTROL AND AUTHORIZATION:	7
7. REENTRANCY ATTACKS:	10
8. ERC/BEP STANDARD VIOLATIONS:	6
9. USAGE OF VISIBILITY LEVELS:	10



# 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



Issue description	Checking status
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

Nil



## Medium Severity Issues

### Centralization Risk

- The adminAddress(0x396A3BD226236192FEd4a4d978B99B82c88BaEb3), is hardcoded into the contract with no method of changing it. If the admin Address gets hacked, the attacker can call all the functions available. It is important to keep the Admin address secure.

### Tx-Origin possible attack

- setOnlyCaller check that the tx.origin is equal to admin address. This represents a vulnerability:

<https://immunebytes.com/detailed-analysis-of-authentication-with-tx-origin/>



## Low Severity Issues

- **Cannot unlock ownership:**

The lock() function is the equivalent of renounceOwnership(). There is no way to regain ownership if the Lock function is called, it is recommended to not call this function unless you wish to renounce the contract.



# CONCLUSION

**Watchtower reviewed the HodlerHeroes NFT deployed and verified contract to conduct this audit.**

**Watchtower is satisfied that the contract is void of any malicious coding and that the team are operating with integrity.**

## ***Watchtower Disclaimer:***

*Please check the disclaimer page and note, this Audit is intended to inform about token Contract Risks, the result does not imply an endorsement or in any way provide financial advice, please do your own research. By reading this report you accept and agree to the disclaimer and understand investments are made at your own risk.*

*(<https://www.cryptowatchtower.io/>)*

## **Contact Us**

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