

PureChain API User Guide

A Practical Guide to Using the PureChain Blockchain API

Introduction

The PureChain API allows you to interact with the PureChain blockchain without running your own node. This guide will show you how to use the API for common tasks like verifying transactions, checking balances, and generating receipts for your records.

What Can You Do With This API?

1. Verify Transaction Status - Check if your transactions went through successfully
2. Generate Transaction Receipts - Create official receipts for your blockchain transactions
3. Check Account Balances - View PURE token balances for any address
4. Track Transaction History - See all transactions for a specific address
5. Monitor Smart Contracts - Track events and interactions with smart contracts
6. Verify Block Information - Confirm when transactions were included in blocks

Getting Started

Using the API in Your Browser

You can access the API directly from your web browser. Simply paste the API URL into your browser's address bar:

Example:

```
https://nsllab-kit.onrender.com/purechain/api/v1/tx/0x9734d1e546e349faaff2ffe9b50fbe5eff63a7815b44342680f9bbe281f2442
```

Common Use Cases

Use Case 1: Verifying a Payment

Scenario: You sent PURE tokens to someone and want to verify the transaction was successful.

Step 1: Get your transaction hash from your wallet (it looks like: 0x9734d1e5...)

Step 2: Visit this URL in your browser:

```
https://nsllab-kit.onrender.com/purechain/api/v1/tx/0x9734d1e546e349faaff2ffe9b50fbe5eff63a7815b44342680f9bbe281f2442
```

Step 3: Check the response. If status is 'success', your transaction went through!

What you'll see:

```
{  "success": true,  "data": {    "hash":    "0x9734d1e546e349faaff2ffe9b50fbe5eff63a7815b44342680f9bbe281f2442",    "status": "success",    "from": "0x6b54d4dfca1b6eff060db2027ccdea2708d1fe79",    "to": "0x44a393fa8a45ec4b5c8e05804831851759a91487",    "value": "0",    "confirmations": 26  }}
```

Use Case 2: Generating a Transaction Receipt

Scenario: You need an official receipt for a blockchain transaction for accounting or tax purposes.

Option A - HTML Receipt (Recommended): Get a formatted webpage receipt:

<https://nsllab-kit.onrender.com/purechain/api/v1/tx/0x9734d1e546e349faaff2ffe9b50fbe5eff63a7815b44342680f9bbe281f2442/receipt>

This gives you a professional-looking receipt webpage that you can print or save as PDF.

Option B - JSON Receipt Data: Get comprehensive receipt data for programmatic use:

<https://nsllab-kit.onrender.com/purechain/api/v1/receipt/0x9734d1e546e349faaff2ffe9b50fbe5eff63a7815b44342680f9bbe281f2442>

This provides detailed receipt data including decoded smart contract events in JSON format.

What HTML receipts include:

- Professional formatting suitable for printing
- Transaction details (from, to, value)
- Block information (when it was confirmed)
- Gas usage (always 0 on PureChain!)
- Contract events with full details
- Decoded event parameters (when available)
- Timestamp and confirmations

Tip: HTML receipts can be printed directly from your browser or saved as PDF for permanent records.

Use Case 3: Checking Account Balance and History

Scenario: You want to check your PURE token balance and see your recent transactions.

Step 1: Get your wallet address (starts with 0x)

Step 2: Visit:

<https://nsllab-kit.onrender.com/purechain/api/v1/address/0x44A393FA8A45ec4b5C8e05804831851759a91487>

What you'll see:

- Current PURE balance
- Total number of transactions
- List of recent transactions (up to 20)
- Whether the address is a smart contract

Tip: To see more transactions, add ?limit=50 to the URL (max 100)

Use Case 4: Monitoring Smart Contract Events

Scenario: You interact with a smart contract and want to see all events it has emitted.

When you check a smart contract address, the API automatically includes all contract events. This is useful for:

- Tracking token transfers
- Monitoring governance votes
- Verifying contract state changes
- Auditing contract activity

Example: Check Multi-sig contract events:

<https://nsllab-kit.onrender.com/purechain/api/v1/address/0x9C4c85ea90Ea97Afcc30F72926ecbc22b96B8b9b>

Understanding API Responses

All API responses follow a standard format:

Success Response:

```
{  "success": true,  "data": {    // Your requested data here  }}
```

Error Response:

```
{  "success": false,  "error": "Error type",  "message": "Detailed error message"}
```

Key Terms Explained

Term	Explanation
Transaction Hash	A unique identifier for your transaction (like a receipt number)
Block Number	The sequential number of the block containing your transaction
Gas	Transaction fee (always 0 on PureChain!)
PURE	The native token of PureChain
Wei	The smallest unit of PURE (1 PURE = 10 ¹⁸ Wei)
Smart Contract	A program that runs on the blockchain
Event	A log entry created by a smart contract

Practical Examples for Different Users

For Businesses

Payment Verification System

Use the confirmation endpoint to automatically verify customer payments:

1. Customer provides transaction hash after payment
2. Your system calls: `/purechain/api/v1/tx/{hash}`
3. Check if status is 'success' and value matches expected amount
4. Generate receipt using `/purechain/api/v1/receipt/{hash}`

For Accountants

Transaction History Export

Get complete transaction history for tax reporting:

1. Use `/purechain/api/v1/address/{address}?limit=100`
2. Save the JSON response
3. Import into Excel or accounting software
4. Each transaction includes timestamp, value, and parties involved

For Non-Technical Users

Simple Balance Check

Just paste this URL in your browser, replacing the address with yours:

`https://nslab-kit.onrender.com/purechain/api/v1/address/YOUR_ADDRESS_HERE`

You'll instantly see your balance and recent transactions!

Troubleshooting Common Issues

"Transaction not found" error

- Check that you copied the full transaction hash (66 characters)
- Ensure the transaction is on PureChain, not another blockchain
- Wait a few seconds if the transaction is very recent

"Invalid address format" error

- Address must start with 0x
- Must be exactly 42 characters long
- Only contains numbers 0-9 and letters a-f/A-F

"Rate limit exceeded" error

- You've made too many requests (limit: 100 per minute)
- Wait 60 seconds and try again
- For heavy usage, contact support for higher limits

Advanced Features

Block Information

Get information about specific blocks:

Latest block: <https://nslab-kit.onrender.com/purechain/api/v1/block/latest>

Specific block: <https://nslab-kit.onrender.com/purechain/api/v1/block/55309>

Legacy Endpoints

For backward compatibility, a simpler confirmation endpoint is available:

<https://nslab-kit.onrender.com/purechain/api/confirmation/{hash}>

CORS Support

The PureChain API fully supports Cross-Origin Resource Sharing (CORS), allowing you to:

- Make API calls from any web application
- Integrate with frontend frameworks (React, Vue, Angular)
- Build browser extensions and web-based tools
- Access the API from CodePen, JSFiddle, or other online editors

Example JavaScript code:

```
fetch('https://nslab-kit.onrender.com/purechain/api/v1/tx/0x9734d1e546e349fa  
aff2ffee9b50f5e5eff63a7815b44342680f9bbe281f2442') .then(response =>  
response.json()) .then(data => console.log(data)) .catch(error =>  
console.error('Error:', error));
```

Best Practices

1. Always verify transaction hash format before making requests
2. Save API responses for your records
3. Check both 'success' field and 'status' for transactions
4. Use the receipt endpoint for official documentation
5. Don't share your private keys - the API only needs public addresses

Quick Reference Card

Task	URL Pattern
Check transaction	/purechain/api/v1/tx/{hash}
Get HTML receipt	/purechain/api/v1/tx/{hash}/receipt
Get JSON receipt	/purechain/api/v1/receipt/{hash}
Check balance	/purechain/api/v1/address/{address}
Get block info	/purechain/api/v1/block/{number}
Quick confirm	/purechain/api/confirmation/{hash}