Article

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Contents

1 Initializations

Script 1.0.1 (python)

```python
import requests, sys
import json
import numpy as np
import matplotlib.pyplot as plt
try:
    import pandas as pd
    if pd.__version__ > "0.22.0":
        has_pandas = True
    else:
        has_pandas = False
except ImportError:
    has_pandas = False

%matplotlib inline

server = "http://rest.ensembl.org"
headers={ "Content-Type" : "application/json", "Accept" : "application/json"}
```

2 Lookup

Script 2.0.1 (python)

```python
ext = "/lookup/id"
# Get lookup data
r = requests.post(server+ext, headers=headers, data='{ "expand" : 1, "ids" : ["ENSG00000157764"] }')

if not r.ok:
    r.raise_for_status()
    sys.exit()

found = json.loads(r.text)
```

3 Get sequences

Script 3.0.1 (python)

```python
# Create list of ID
IDs = []
for transcripts in found.values():
    for transcript in transcripts["Transcript"]:
        IDs.append(transcript["id"])

```

```python
dquotes_ids=json.dumps({"ids" : IDs})
print(dquotes_ids)

# Get sequence data
ext = "/sequence/id"

# Make request and check status
r = requests.post(server+ext, headers = headers, data = dquotes_ids)
if not r.ok:
    r.raise_for_status()
    sys.exit()

json_data = json.loads(r.text)
```

Output

```
{"ids": ["ENST00000496384", "ENST00000644120", "ENST00000642875", "ENST00000644969",
↪  "ENST00000646891", "ENST00000644905", "ENST00000642228", "ENST00000288602",
↪  "ENST00000645443", "ENST00000646730", "ENST00000479537", "ENST00000647434",
↪  "ENST00000644650", "ENST00000497784", "ENST00000646334", "ENST00000642272",
↪  "ENST00000643356", "ENST00000642808", "ENST00000643790", "ENST00000646427",
↪  "ENST00000469930"]}
```

4 Get triplets

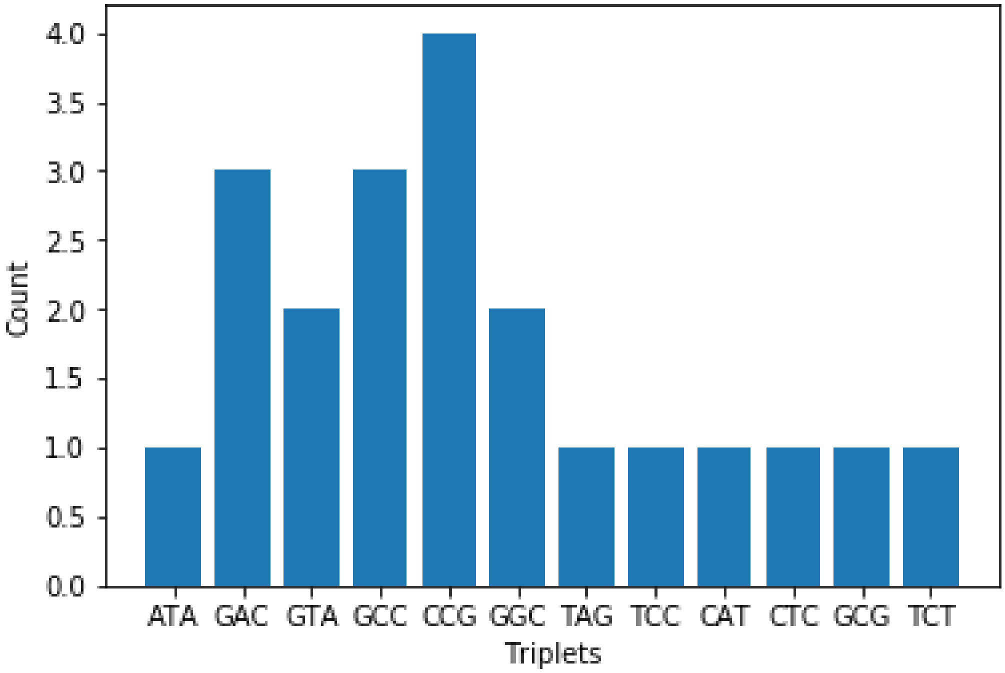
Script 4.0.1 (python)

```python
count_triplets = {}
count_all = 0
for record in json_data:
    triplet = record["seq"][102:105]
    count_all += 1
    if triplet in count_triplets:
        count_triplets[triplet] += 1
    else:
        count_triplets[triplet] = 1

if has_pandas:
    df = pd.DataFrame.from_dict(count_triplets, orient='index', columns=['Count'])
    display(df)
else:
    display(count_triplets)
plt.bar(count_triplets.keys(), count_triplets.values())
plt.xlabel('Triplets')
_ = plt.ylabel('Count')
```

```
     Count
ATA      1
```

```
GAC       3
GTA       2
GCC       3
CCG       4
GGC       2
TAG       1
TCC       1
CAT       1
CTC       1
GCG       1
TCT       1
```


Count
ATA
GAC
GTA
GCC
CCG
GGC
TAG
TCC
CAT
CTC
GCG
TCT
Triplets