

Assertions API Detailed Docs

Based on documentation available at api.molecularmatch.com

Assertion Search

Image from the web application. The app is good for discovery purposes or physician use.

The screenshot shows the MolecularMatch web application interface. At the top, the logo 'MolecularMatch' is displayed with the tagline 'CLINICAL INTELLIGENCE ON-DEMAND'. To the right, there are icons for a grid and a user profile (labeled 'S'). The main search area features a search bar with the text 'Lung cancer BRAF V600E' and a 'SEND TO' button. Below the search bar, there are several filter dropdowns: 'Regulatory Body' (set to FDA), 'Biomarker Class' (set to Predictive/Therapeutic), 'Tiering Template' (set to AMPCAP), 'Clinical Significance' (set to Sensitive), 'Tier' (set to All), 'Direction' (set to Supports), and 'Version' (set to 4). At the bottom of the filter section, there are buttons for '← Previous Page' and 'Next Page →'. The search results section displays a single result: '1B - BRAF V600E confers sensitivity to Vemurafenib in patients with Non-small cell lung cancer'.

Let's break down a typical search scenario

Looking for treatments with supporting evidence where the biomarker provided is predictive of drug sensitivity.

For Lung cancer patients with a BRAF mutation, where you only want to return exact mutation matches (strict), it would be queried like this:

```
filters = [
    {"facet": "CLINICAL_SIGNIFICANCE", "term": "sensitive"},
    {"facet": "BIOMARKER_CLASS", "term": "predictive"},
    {"facet": "ASSERTION-DIRECTION", "term": "supports"},
    {"facet": "MUTATION", "term": "BRAF V600E"},
    {"facet": "CONDITION", "term": "Lung cancer"}
]
payload = {
    'apiKey': <my api key>,
    'filters': json.dumps(filters),
    'tieringTemplate': 'AMPCAP',
    'mode': 'strict'
}
url = 'https://api.molecularmatch.com/v2/assertion/search'
r = requests.post(url, json=payload)
print(json.dumps(r.json()))
```

Valid Values:

- BIOMARKER_CLASS --- Predictive/Theranostic , Diagnostic , Prognostic , Unknown
- CLINICAL_SIGNIFICANCE --- Resistant , No Response , Sensitive , Favorable , Unfavorable , Unknown
- DIRECTION --- Supports , Does Not Support
- tieringTemplate --- AMPCAP , MVLD

Assertion Response

1B - KRAS G12C confers sensitivity to Selumetinib in patients with Non-small cell lung cancer

Selumetinib

Biomarker Class: predictive

Clinical Significance: sensitive

Direction: supports

Unmet Criteria

Non-small cell lung cancer +

SHOW LESS

Evidence

Classifications

Variant Info

Prevalence

Regulatory Body

FDA

Guideline Body

Regulatory Body Approved

✖

PUBMED - 23200175 - trial - prospective - NCT00890825

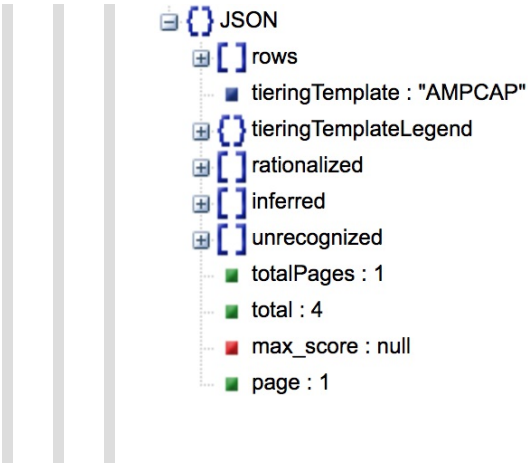
PUBMED - 26125448 - trial - retrospective - NCT00890825

PUBMED - 22425996 - preclinical - mouse_model

API Response

Here is the breakdown of the response, starting from the high-level, and digging into the fields of the assertion records.

High-level response.



Detailed information on the mutations in this assertion.

A screenshot of a search results tree. The root node is 'mutations' (blue icon). It has a child '0' (blue icon). Under '0' is 'transcriptConsequence' (blue icon). Under 'transcriptConsequence' are '0' through '7' (blue icons). Below these is 'longestTranscript : "NM_004333.4"' and 'name : "BRAF V600E"'. Below that is '_src : 1'. Then 'sources' (blue icon), 'synonyms' (blue icon), 'parents' (blue icon), and '0' (blue icon). Under '0' is 'transcripts' (blue icon). Under 'transcripts' are 'type : "exon mutation"' and 'name : "BRAF exon 15 mutation"'. Below that are '1' and '2' (blue icons). Then 'GRCh37_location' (blue icon). Under 'GRCh37_location' are 'uniprotTranscript : "NM_004333.4"', 'id : "4b779c808237a792b448b7de91bcaced"', and 'geneSymbol : "BRAF"'. Then 'pathology' (blue icon). Under 'pathology' is 'transcript : "NM_004333.4"'. Finally, 'mutation_type' (blue icon).

Other tiering system's scores have also been calculated.

A screenshot of a search results tree. The root node is 'includeCondition1' (blue icon). It has children '0 : "Non-small cell carcinoma of lung, TNM stage 4"', '1 : "Non-small cell lung cancer"', and '2 : "Malignant tumor of lung"' (all blue icons). Above 'includeCondition1' are several nodes: 'mvld : "1"', 'sixtier : "1"', 'tier : "1A"', 'civic : "A"', 'guidelineBody : "NCCN"', 'regulatoryBody : "FDA"', 'regulatoryBodyApproved : true', and 'expression : ""Non-small cell lung cancer" && "BRAF V600E"'.

The criteria your search did not match. This assertion was for NSCLC, but you entered it's parent Lung cancer (root term = Malignant tumor of lung).

A screenshot of a search results tree. The root node is 'criteriaUnmet' (blue icon). It has a child '0' (blue icon). Under '0' are 'facet : "CONDITION"', 'compositeKey : "Non-small cell lung cancerCONDITIONinclude"', 'isNew : true', 'suppress : false', 'filterType : "include"', 'term : "Non-small cell lung cancer"', 'primary : true', 'priority : 1', and 'valid : true'.