



MED Food TTHubs - Trace & Trust Hubs for MED Food
Grant Agreement No 1931

Med Food TTHubs e-Platform Step-by-Step Guide: Creation/Management of DNA Profiles (Local Administrator)

Lead Beneficiary: GP

Issued by: GP

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1. Aim

The user with the role Local Administrator enters the platform and creates or manage an DNA Profile which is connected to a specific brick of GPC (Global Product Classification - <https://www.gs1.org/standards/gpc – Segment 50>).

Methods based on the genetic identification of food by polymerase chain reaction (PCR) are available to identify authenticity and traceability by exploiting the genetic variability of different species and even varieties. Genetic material (DNA) is suitable as a means of traceability, as it is an extremely stable biomolecule that can be recovered from a large number of biological samples even if they have not been preserved in ideal conditions. Two basic genetic identification techniques are molecular markers and DNA barcoding, which deal with the molecular identification of varieties and species respectively.

TTHubs e-platform is acting as a repository of DNA Profiles which can be attached to specific Template Products (Use Case 15). The e-platform also provides the capability to users to check whether the DNA Profile of a specific product is corresponding (similarity test) to the DNA Profile of the Template Product to which the specific Product claims to be connected with (Use Case 16). For the implementation of these checks the Blast algorithm at NCBI (<http://www.ncbi.nlm.nih.gov>) is used, which is called through an API.

2. Sign-in Process

2.1. For the web:

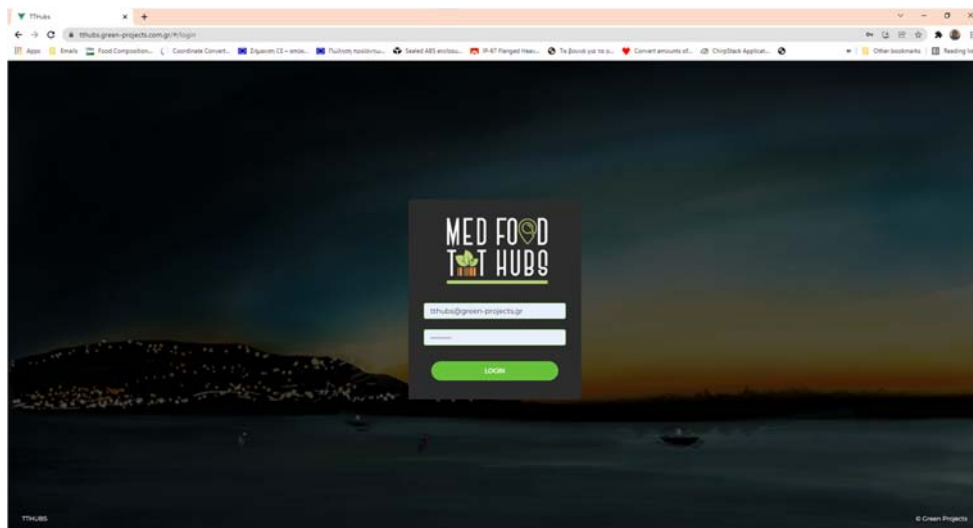
Link: <https://tthubs.green-projects.com.gr/>

Username: tthubs-local-admin@green-projects.gr

Password: greengreen

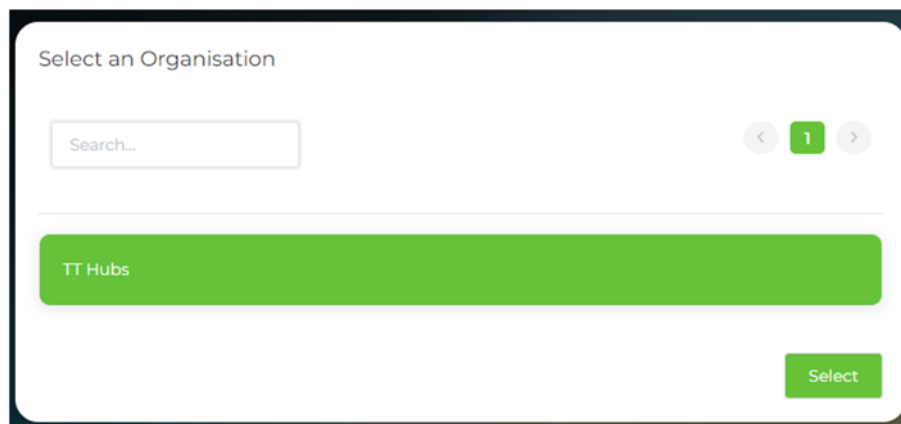
Attention!: for this use case a user with the role of Local Administrator shall be used

Sign in page

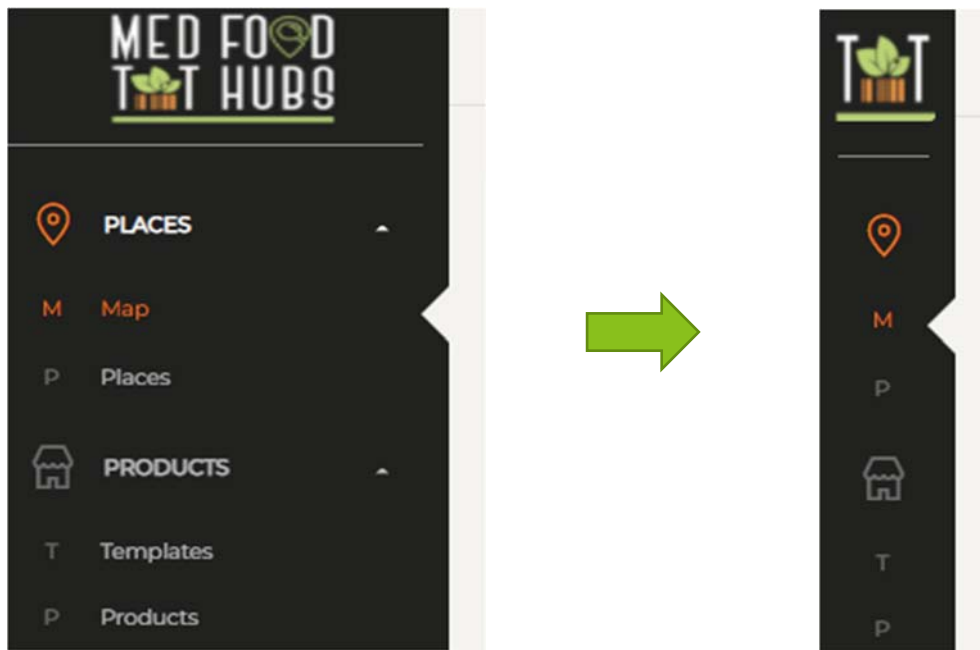


Select Organisation.

Each user may belong to one or more organisations and may have one or more roles. The user tthubs-local-admin@green-projects.gr belongs to TT Hubs Organisation and he/she has the role of Farmer/Breeder/Packer/Seller.



Left Menu – Select e-platform area

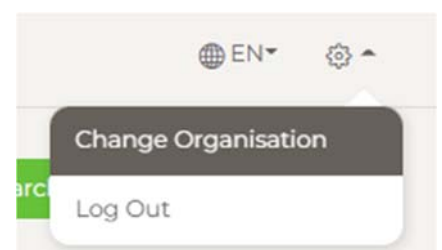


Based on the role(s) that each user has the relevant menu items are visible. The menu is foldable

by pressing . Buttons support the navigation in the platform and the return to homepage (Places→Map).

Select Language and other choices

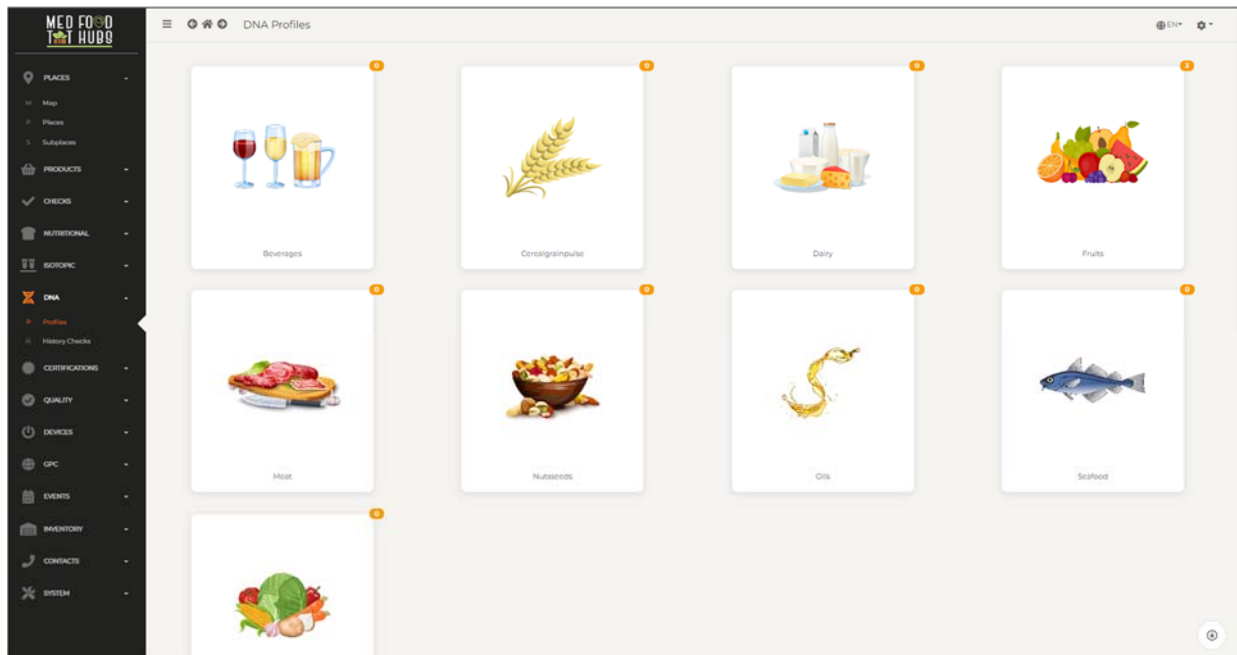
On each page of the platform there is a menu at the upper right corner allowing the selection of the language (the platform will be available in English, Greek, Italian, Spanish, Portuguese and Arabic – the multilinguistic operation of the platform is not yet fully functional). There are also choices for changing the selected organisation, if the use belongs to more than one organisation and for log out.



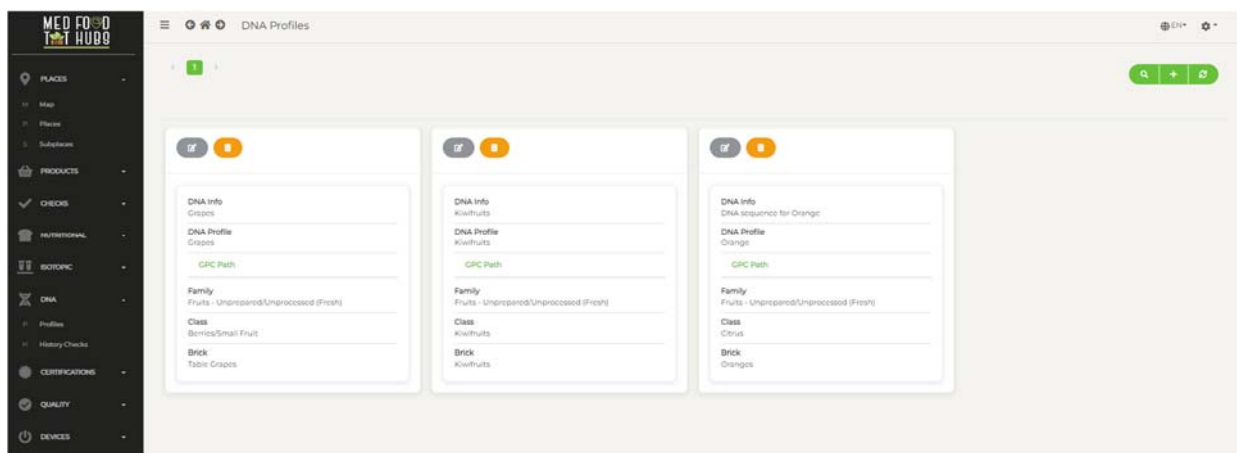
3. DNA


Under the menu DNA two choices are found: “Profiles” and “History Checks”.

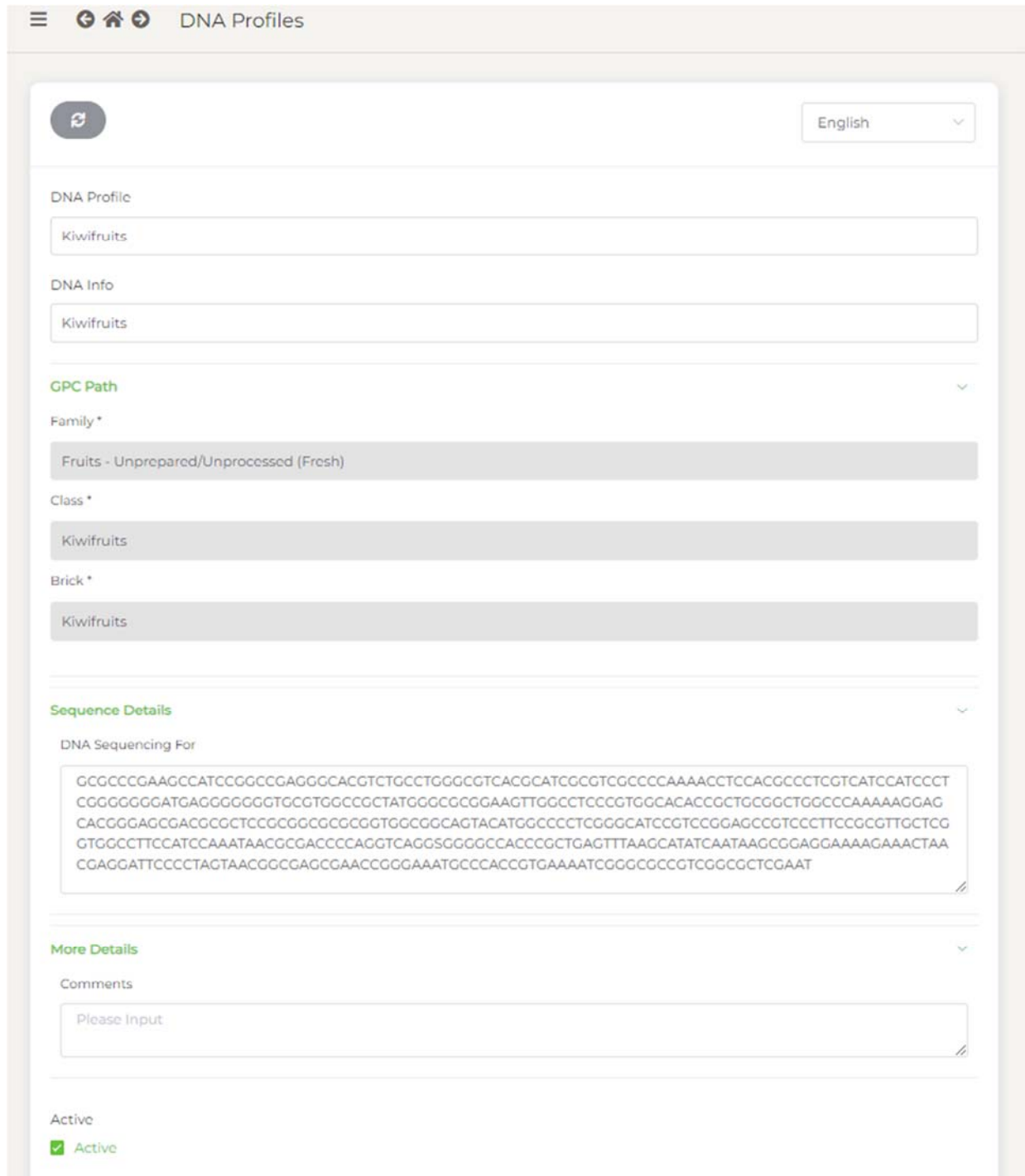
The choice “Profiles” shows a list of product categories is available to the user to select. For each category the number of available DAN Profiles is shown.



After selecting a category, a list of DNA Profiles is shown to the user. In this example the category “Fruits” has been selected. A DAN Profile is an entity that has a specific DNA sequence, which describe this product.




By selecting the button  the details of the selected profile are available to the user. These details include at the left side of the page the GPC path (at Brick level), the place where this DNA profile is found and some comments.



The screenshot shows a web application interface for 'DNA Profiles'. At the top, there is a navigation bar with a menu icon, a home icon, and a refresh icon, followed by the text 'DNA Profiles'. Below this is a main content area with a search bar containing 'Kiwifruits' and a language dropdown set to 'English'. The profile details are organized into sections:

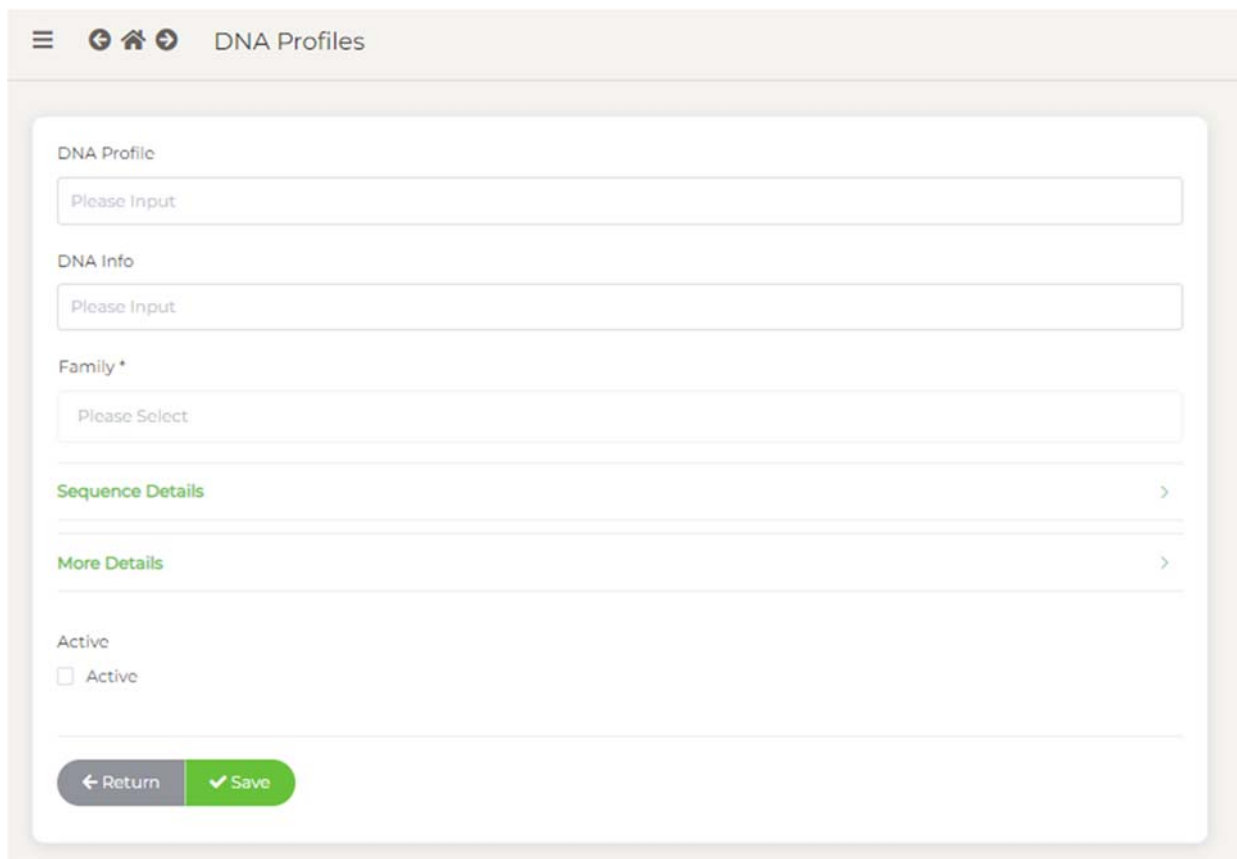
- DNA Profile:** A text input field containing 'Kiwifruits'.
- DNA Info:** A text input field containing 'Kiwifruits'.
- GPC Path:** A section header with a dropdown arrow.
- Family *:** A dropdown menu showing 'Fruits - Unprepared/Unprocessed (Fresh)'.
- Class *:** A dropdown menu showing 'Kiwifruits'.
- Brick *:** A dropdown menu showing 'Kiwifruits'.
- Sequence Details:** A section header with a dropdown arrow. Below it is the text 'DNA Sequencing For' followed by a large text area containing a DNA sequence:


```
GCGCCGAAGCCATCCGGCCGAGGGCACGTCTGCCTGGGCGTCACGCATCGCGTCGCCCCAAAACCTCCACGCCCTCGTCATCCATCCCT
CGGGGGGATGAGGGGGGTGCGTGGCCGCTATGGGCGGGAAGTTGGCTCCCGTGGCACACCGCTGCGGCTGGCCAAAAAGGAG
CACGGGAGCGACGCGCTCCGCGCGCGCGGTGGCGGCAGTACATGGCCCTCGGGCATCCGTCGGAGCCGTCCTTCCCGCTTGCTCG
GTGGCCTTCCATCCAAATAACGGCACCCAGGTCAAGSGGGGCCACCCGCTGAGTTTAAGCATATCAATAAGCGGAGGAAAAGAACTAA
CGAGGATCCCTAGTAACGGCGAGCGAACCGGAAATGCCACCGTGAAAATCGGGCGCGTCGGCGCTCGAAT
```
- More Details:** A section header with a dropdown arrow. Below it is the text 'Comments' followed by a text input field containing 'Please Input'.
- Active:** A label with a checked checkbox and the text 'Active'.

In order to create a new DNA Profile, the user shall select the corresponding category (e.g. Seafood for our example) and then select the button  at the upper right side of the page.



An empty form of the DNA Profile is opened and the user shall fill in the necessary information.



The screenshot shows a mobile application interface for creating a DNA Profile. At the top, there is a navigation bar with a hamburger menu icon, a back arrow, a home icon, a refresh icon, and the text "DNA Profiles". Below the navigation bar is a form with the following sections:

- DNA Profile:** A text input field with the placeholder text "Please Input".
- DNA Info:** A text input field with the placeholder text "Please Input".
- Family*:** A dropdown menu with the placeholder text "Please Select".
- Sequence Details:** A section header with a right-pointing chevron icon.
- More Details:** A section header with a right-pointing chevron icon.
- Active:** A checkbox labeled "Active".

At the bottom of the form, there are two buttons: a grey "Return" button with a left-pointing chevron and a green "Save" button with a checkmark.

These details include the following information:

Title (a descriptive name of the Isotopic Profile) (e.g Botargo (Greece - Messologi – PDO))

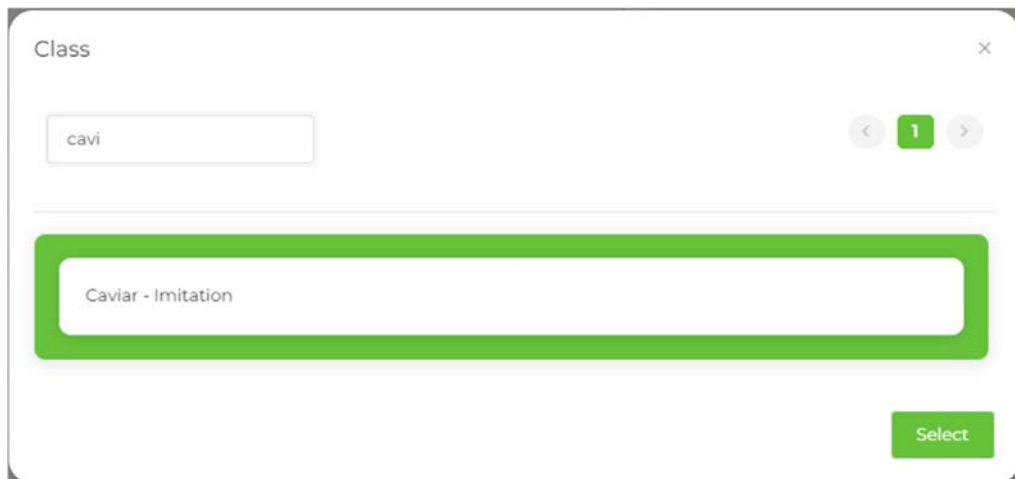
DNA Info (optional some information concerning the DNA analysis) (e.g. DNA analysis from CERTH Labs (20210625CS18P7 (Sample 1))

Family (selection from a list of GPC families based on the selected category).



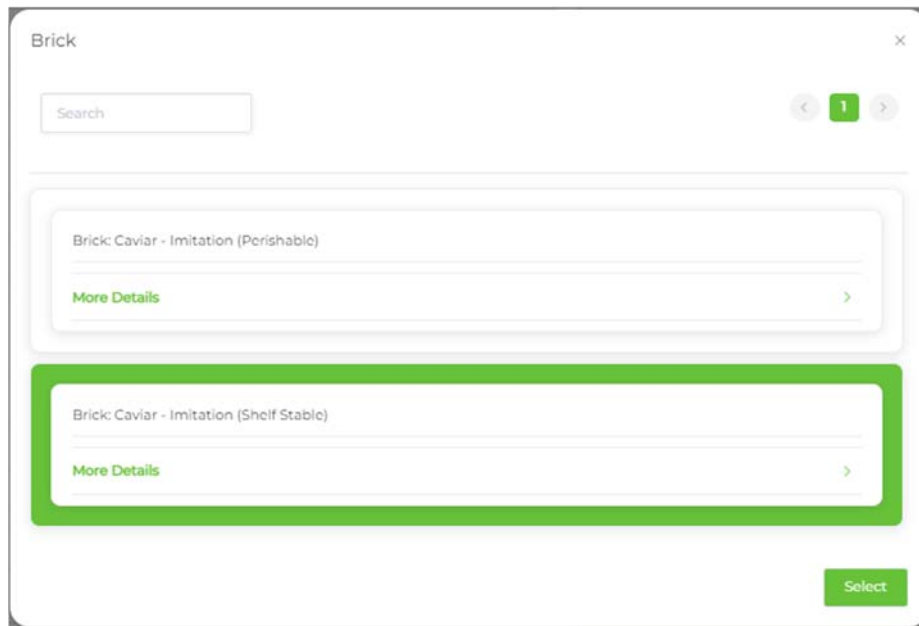
If the user doesn't know which Family to select a search feature is provided where the user may enter a key word related to the Brick that would like to connect.

Class (the next level of GS1 GPC classification based on the selected *Family*)



If the user doesn't know which Class to select a search feature is provided where the user may enter a key word related to the Brick that would like to connect.

Brick (the next and final level of GS1 GPC classification based on the selected *Class*)



The user enters in the search field the name of the Brick that would like to connect and a filter is applied.

After the selection of a brick the origin (specific place) where this Isotopic Profile is found is selected. The requested information includes the following details:

DNA Sequencing For (in this field the DNA sequencing is being entered)

e.g.:

```
ATAGATGCCGCGTAAAGAGTGGTTAAGTATTTTGATAGAACTAAAGCCGAACGCCCTCA
AGACCGTTATACGTTTCCGAAGGTATGAAGCCCAACTACGAAAGTAACTTTAACTATATC
TGATTCCACGAAAGCTGCGAAACAAACT
```

Finally, some comments can be added and the Active checkbox shall be checked.

After filling in the proper information the button  is pressed. The information is saved and the list of isotopic elements is shown at the right side of the page.

☰ ⏪ 🏠 ⏩ DNA Profiles

🔄 English ▾

DNA Profile

Botargo (Greece - Messologi - PDO)

DNA Info

DNA analysis from CERTH Labs (20210625CS18P7 (Sample 1))

GPC Path ▾

Family *

Seafood and Seafood Substitutes

Class *

Caviar - Imitation

Brick *

Caviar - Imitation (Shelf Stable)

Sequence Details ▾

DNA Sequencing For

```
ATAGATGCCCGCGTAAAGAGTGGTTAAGTATTTGATAGAACTAAAGCCGAACGCCCTCA
AGACCGTTATACGTTCCGAAGGTATGAAGCCCAACTACGAAAGTAACTTTAACTATATC
```

More Details ▾

Comments

Please Input

Active

Active

← Return ✓ Update 🗑 Delete