

Package ‘ImaginR’

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Type Package

Title Delimit and Characterize Color Phenotype of the Pearl Oyster

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Description The pearl oyster, *Pinctada margaritifera* (Linnaeus, 1758), represents the second economic resource of French Polynesia. It is one of the only bivalves expressing a large varied range of inner shell color, & by correlation, of pearl color. This phenotypic variability is partly under genetic control, but also under environmental influence. With *ImaginR*, it's now possible to delimit the color phenotype of the pearl oyster's inner shell and to characterize their color variations (by the HSV color code system) with pictures.

Depends imager

Imports grDevices, jpeg

License GPL (>= 2)

BugReports <https://github.com/PLStenger/ImaginR/issues>

Encoding UTF-8

LazyData true

RoxygenNote 6.0.1

NeedsCompilation no

Repository CRAN

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R topics documented:

ColorPhenotype	2
hex2rgb	2
OneRow	3
OutPutResult	4
PictureResults	5
print.myclass	5

Index[7](#)

ColorPhenotype	<i>Give the color phenotype of the pearl oyster's</i>
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Description

Returns the color phenotype of the pearl oyster's inner shell (*Pinctada margaritifera*)

Usage

```
ColorPhenotype(picture)
```

Arguments

picture The picture uploaded by load.image()

Value

The color phenotype of the pearl oyster's inner shell

Examples

```
fpath <- system.file('extdata/image.jpg',package='ImaginR')
picture <- load.image(fpath)
ColorPhenotype(picture)
```

hex2rgb	<i>Give RGB color code from HEX color code</i>
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Description

Give a RGB color code matrix from HEX color code vector.

Usage

```
hex2rgb(color.vector)
```

Arguments

color.vector HEX code in a vector

Value

RGB code color

Examples

```
# RGB color code of "Alice Blue" color:
hex2rgb("#f0f8ff")
# RGB color code of "Red" color:
hex2rgb("#ff0000")
# RGB color code of "Green" color:
hex2rgb("#008000")
```

OneRow

Get phenotype, HEX and HSV color code for one picture

Description

Get results in one row

Usage

```
OneRow(picture)
```

Arguments

picture The picture uploaded by load.image()

Details

In header:

- id : the name of your pictures
- h : the hue of the hsv color code
- s : the saturation of the hsv color code
- v : the value of the hsv color code
- hex : the hexadecimal color code
- phenotype : returns the color phenotype of the pearl oyster's inner shell (*Pinctada margaritifera*)

Value

The HEX and HSV color code and the color phenotype of the pearl oyster's inner shell for one image in one row

Examples

```
fpath <- system.file('extdata/image.jpg', package='ImaginR')
picture <- load.image(fpath)
OneRow(picture)
```

`OutPutResult`*Get phenotype, HEX and HSV color code for all pictures*

Description

Get results in a .txt file, .csv file and in R data.frame This function does what all the others functions do in a very simple way. Just put your images in your working directory (don't forget to `getwd()`!), do `library` this package and paste this only code: `"OutPutResult()"`. You will get the results into your console and in a results.csv file in your working directory.

Usage

```
OutPutResult(id)
```

Arguments

`id` The name of the pictures in your working directory

Details

In results.csv:

- `id` : the name of your pictures
- `h` : the hue of the hsv color code
- `s` : the saturation of the hsv color code
- `v` : the value of the hsv color code
- `hex` : the hexadecimal color code
- `phenotype` : returns the color phenotype of the pearl oyster's inner shell (*Pinctada margaritifera*)

Value

The HEX and HSV color code and the color phenotype of the pearl oyster's inner shell for all images in a results.csv file

PictureResults	<i>Give HEX and HSV color code</i>
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Description

To get the mean of the HEX color code and the HSV color code of the picture

Usage

```
PictureResults(picture)
```

Arguments

picture The picture uploaded by load.image()

Details

- h : the hue of the hsv color code
- s : the saturation of the hsv color code
- v : the value of the hsv color code
- hex : the hexadecimal color code

Value

results the HEX and HSV color code

Examples

```
fpath <- system.file('extdata/image.jpg', package='ImaginR')
picture <- load.image(fpath)
PictureResults(picture)
```

print.myclass	<i>Usefull for others functions</i>
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Description

Function to print the results (usefull for the others functions)

Usage

```
## S3 method for class 'myclass'
print(x, ...)
```

Arguments

x the results
... if necessary

Value

the header of the results

Index

ColorPhenotype, [2](#)

hex2rgb, [2](#)

OneRow, [3](#)

OutPutResult, [4](#)

PictureResults, [5](#)

print.myclass, [5](#)