Infection rate determination

DAPI and NP segmentation

Name your images correctly from the start

Please label your data as followed:
date_condition _descriptionYouWouldlike

Info: Please use „_“ for separating different informations, otherwise you have to change it in the code.

Example:

3.11.2023_Female_H7N7_MOI0.05_6h_IBA1,CD68,Ki67_20x.czi

If you code your condition like this:

3.11.2023_A1_IBA1,CD68,Ki67_20x.czi

Please decode your data prior to the following analysis (you can use another code for this or do it manual).

```
# ============================================================================
# Please specify your channel and pixel size
# ============================================================================

DAPI = 0
NP = 2
pixels_to_um = 0.2930000 #size of pixel

# ============================================================================
# Please specify your conditions for plotting
# ============================================================================

# Define condition names for labels and actual condition strings
# if you do not have 2 belonging conditions (e.g. sex), you can name them here
# Important: Make sure that the value is exaclty like this in your filename!

condition_definitions = {
    'Female 6h': 'Female_H7N7_MOI0.05_6h',
    'Male 6h': 'Male_H7N7_MOI0.05_6h',
    'Female 24h': 'Female_H7N7_MOI0.05_24h',
    'Male 24h': 'Male_H7N7_MOI0.05_24h',
}


################################################################################
# Functions
################################################################################

# ============================================================================
# The following functions need to be altered for different users as the naming
# of your files is important here
# ============================================================================

def ConditionFinder (filename):
    condition = filename.split("_")[1:5]
    condition = '_'.join(condition[0:])

    return condition


def RoundFinder(filename):
    cell_round = filename.split("_")[0]

    return cell_round
```

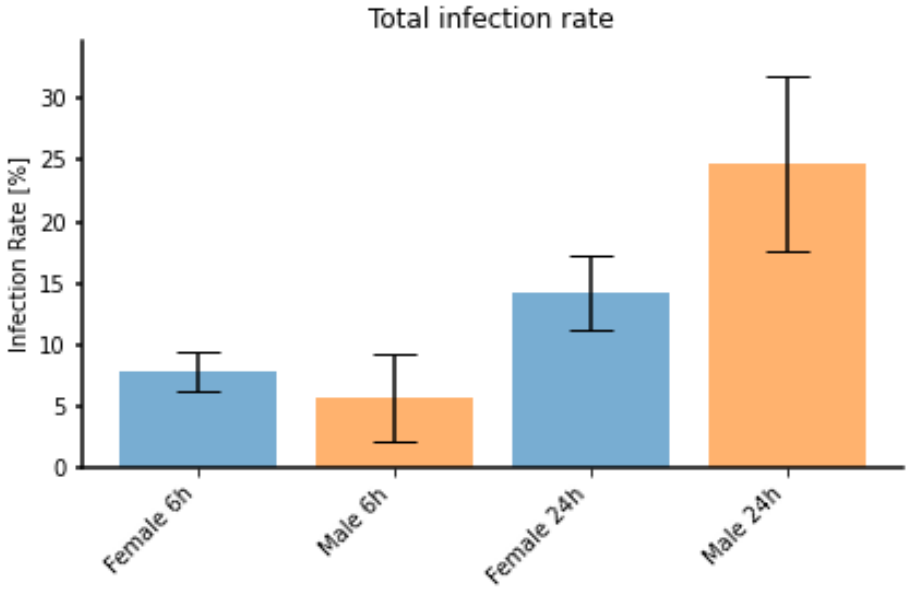
Please select the channel correclty! **Important**, otherwise you will create wrong data!!! And please add your pixel size, for size filtering.

Please enter here your condition names. Only important for plotting, if you do not want your data to be plotted, you do not need this here.

If you did the naming differently then recommended, please change it here accordingly!

Run the code

- You need: your data in one folder and the correct labelling
- Press on run and select the folder with your image data
- You get:



CSV

Infection rates per condition

	A	B	C	D	E
1	round	condition	DAPI_count	NP_count	NP_%
2	9.8.23	Female_H7N	143.5	21.5	14.2185877
3	9.8.23	Female_H7N	145	11.5	7.77041625
4	9.8.23	Male_H7N7_I	61.5	17	24.5538665
5	9.8.23	Male_H7N7_I	142.5	8	5.62641584

Example segmentation