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KEROGENIA is an Excel® based tool for supporting **palynofacies analysis / kerogen counting**. It avoids time consuming recording of counting data on paper sheets.

Main Functions

- Adding samples
- Particle counting via special Excel® screen with click buttons
- Adding comments
- Built in graphic presentation (ternary APP & SMP diagrams)
- Creation of interpretation sheets for reports and documentation

1. Installation

Prerequisites: KEROGENIA needs Microsoft Excel® with enabled VBA (Visual Basic) functions (if you want to use the KEROGENIA palynofacies counting tool, your system administrator must allow to run Excel® workbooks files which contain macros). **If trouble with enabling macros arises, please look at chapter 8 “Trouble shooting”.**

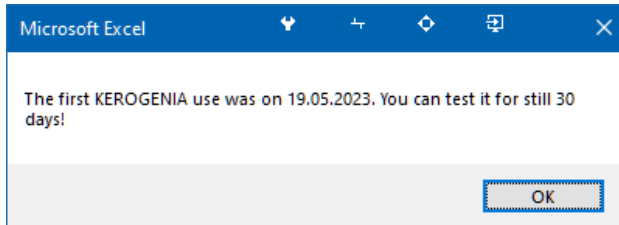
KEROGENIA was developed and tested running Microsoft Office® under Windows 10®. It may run with Microsoft Office® under macOS, but without guarantee that all functions will be available.

KEROGENIA is delivered as Zip File. You only must unzip the file into folder of your choice.

Important: do not delete files or rename it within this folder, otherwise the VBA Code will not run properly.

Same applies for changing the VBA code, data queries or parts of it.

For starting, open the file KEROGENIA.xlsm. You will see the following message.



After the first use, you will have 30 days left for testing KEROGENIA.

After that period, you will be asked to enter a licence key and KEROGENIA will not start.

KEROGENIA does not use much storage capacity, so it is foreseen that for each well or outcrop, for which you will carry out palynofacies analysis, you will save a new copy of the KEROGENIA folder in the respective directory. All further copies of the KEROGENIA created by you, will use the same license key which you must enter only first time using KEROGENIA! The license has no time limitation.

If you want to create palynofacies interpretation sheets for reporting or interpretation, you can insert you own logo. Please replace the file logo.jpg in the KEROGENIA folder with your own logo.jpg. After that it may be necessary to adapt the size of the logo.

Or please open the **workbook Pfacies_sheets.xlsm** and select the sheet "**dummy**". In the header area, click with the right mouse button on the IntegBiostrat logo and select "change picture".

In the sheet "**dummy**" you can also enter the analyst name. It will be used for all further sheets.

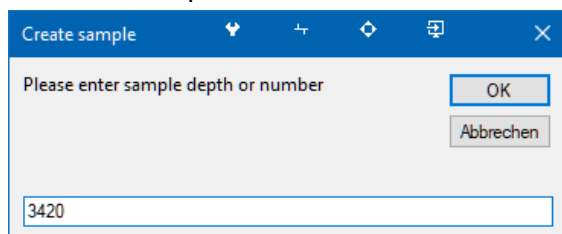
2. Startup

Running the first time, KEROGENIA will start with the "Input" sheet.



1 Please insert a well or outcrop name into this field. This name will be later used for the naming of the exported palynofacies interpretation sheets.

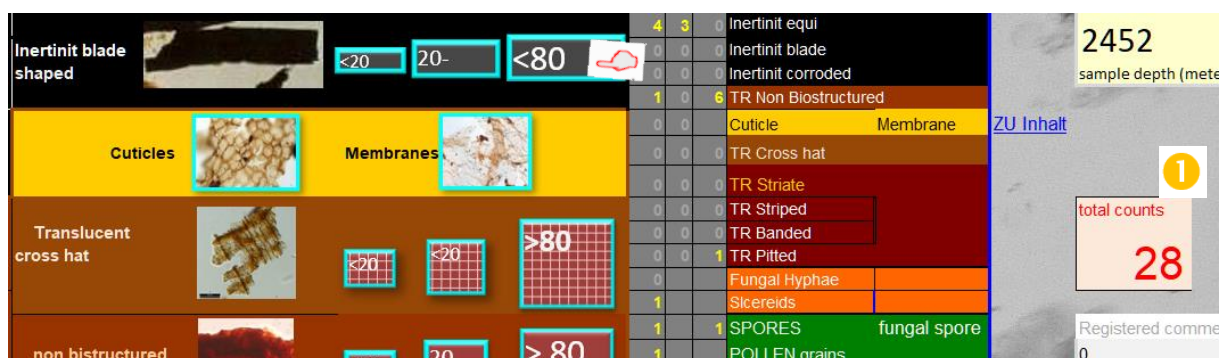
2 Add a sample by clicking the blue cross. An inputbox appears where you can enter the number or depth.



In the background a new row within the sample number sheet "countings" is created.

Now you are ready for your first analysis.

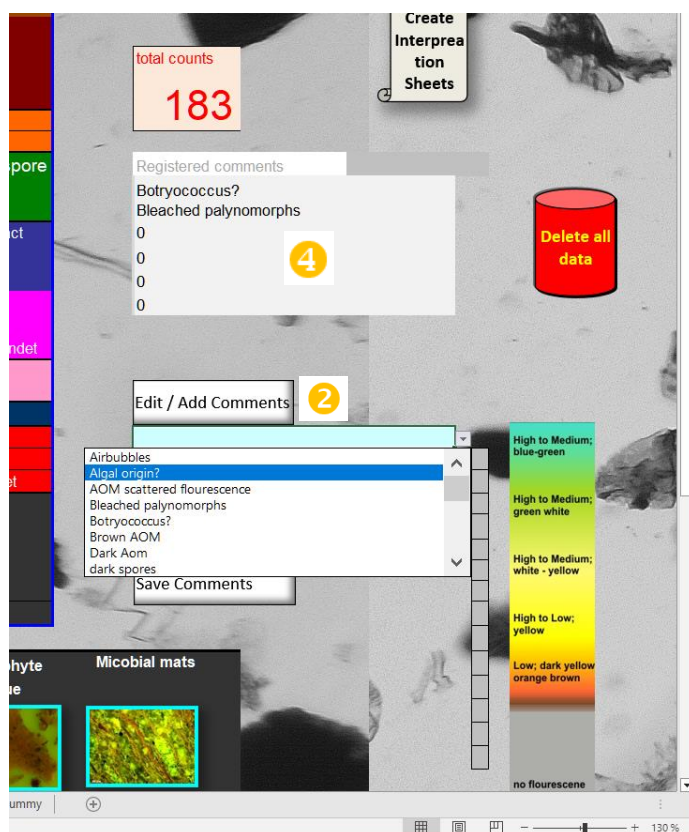
3. Data Entering



Each button or symbol featuring the counting functionality is highlighted with a light blue frame.

For example, clicking the inertinite blade shaped button >80 micron will increase the counting sum for one digit. When you reach 300 counts, the counts field will change its colour from red to green. ¹

Comments: You can add, edit or delete comments



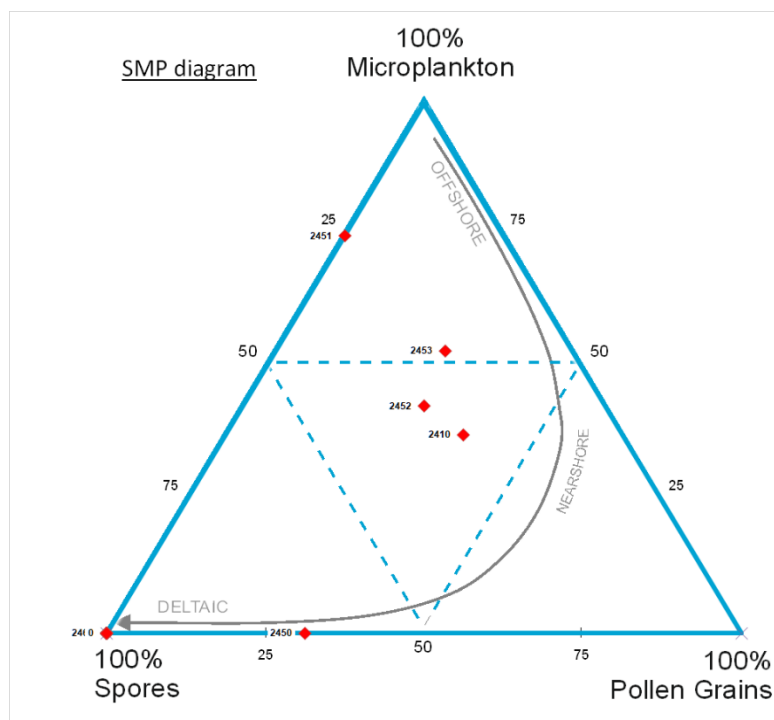
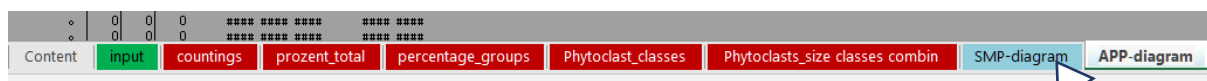
² Comment adding / editing area. It is possible to choose boilerplates from a list or to enter text.

Clicking the "Save comments" ³ button, the comments are written in the sheets countings and displayed as registered comments. ⁴

You can create own preselection comments appearing within the listbox. Please go to the **sheet comments** and make changes as desired.

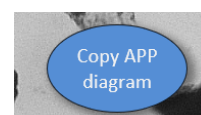
4. Data interpretation & presentation

KEROGENIA offers built in ternary SMP & APP diagrams and a stacked bar chart



You will find them when you choose the correspondent sheet.

The data is already prepared with the suitable format.

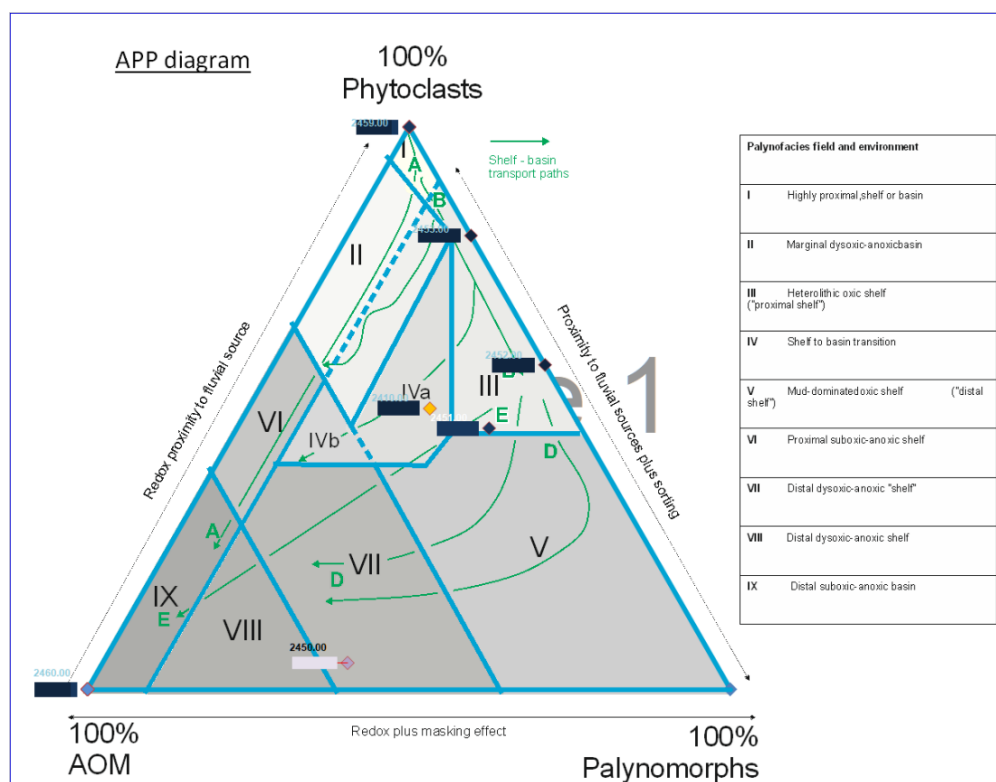


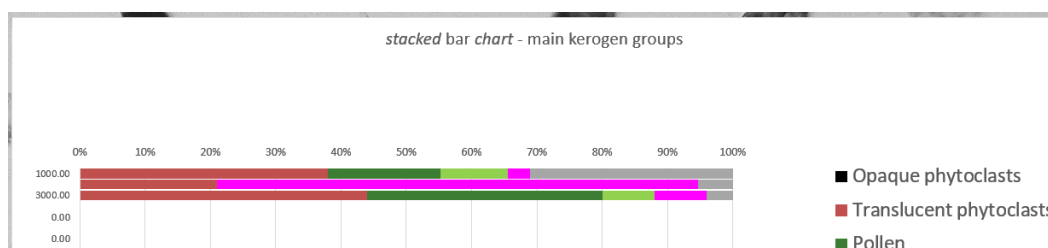
Clicking this button the

diagram will be copied. The you can insert it in MS Office word or drawing software like CorelDraw.

Inserting it as metafile in CorelDraw allows to edit the diagram after


ungrouping





5. Palynofacies interpretation / presentation sheets

These sheets can be used as visualization of the results or as attachments in reports.

If you want to create these sheets, please click on the below shown symbol  within the input sheet. A VBA procedure starts, which fills the Excel workbook "Pfacies_sheets.xlsm" with a sheets each with a name of a sample.

Depending on the number of your analyses, this can take a few minutes.

Each sheet shows two exemplary palynofacies microphotographs. If there are sample microphotographs available, you can easily exchange the pictures (click with the right mouse button on the photograph and select "change picture").



Well / Outcrop Name Sverdrup 6608

Export countings as xlsx

2452
sample depth (meters MD)

new sample

total counts
28

Create Interpretation Sheets

Reset database

Control	Count	Palynofacies Type
4	3	Inertinit equi
0	0	Inertinit blade
0	0	Inertinit corroded
1	6	TR Non Biostructured
0	0	Cuticle
0	0	Membrane
0	0	TR Cross hat
0	0	TR Striate
0	0	TR Striped
0	0	TR Banded
0	0	TR Pitted
1	1	Fungal Hyphae
1	1	Stercoids
1	1	SPORES
1	1	fungus spore
1	1	POLLEN grains
1	1	bisaccate
1	1	Botryococcus
0	0	Algae/Bact
0	0	Pediastrum
0	0	Zygnemataceaea
0	0	Dinocysts chorat
1	1	Dinocysts proximochorat

Palynofacies analysis			
Well:	Sverdrup 6608	Analyst:	Dr. B. Holstein
Depth (mtrs MD)	2450.00	Date:	16.05.2023

Example

Example

Remarks

Average SCI value

comment one

Kerogen counting		phytoclats size					
Groups	Subgroups	Particles	Count	<20	>20 <60	>80	
terrestrial	Opaque	Equant	15	4	11	0	
		Lath	16	0	10	6	
		Corroded	0	0	0	0	
		Non Biostructured	54	15	31	8	
		Cuticle	0	Membrane		0	
	Trans-lucent	Cross hat	0	0	0	0	
		Striate	0	0	0	0	
		Striped	0	0	0	0	
		Banded	0	0	0	0	
		Pitted	1	0	0	1	
		Fungal Hyphae	0	n.a	n.a	n.a	
		Slcereids	0	n.a	n.a	n.a	
	Sporo-morphs	SPORES	2	Paly indet		0	
		POLLEN grains	5				
	Terrestrial palyno-morphs	bisaccate grains	0	fungal spore		9	
Resin		0					
aquatic	Un-structured organic matter	AOM	Macrophyte Tissue	1			
		AOM non flouesc.	50	flour	23	DOM	0
		Microbial Mats	1				
	Fresh-water algae	Botryococcus	0				
		Pediastrum	0				
	Marine/aquatic palyno-morphs	Zygnemataceaea	0	Algae/Bacteria		0	
		Dinocysts	Dinocysts	6	chorat	proximochorat	proximat
	Prasinophytes		0	4	1	0	1
	Acritarchs		0			indet.	
	Foraminifera		0				
Scolecodonts	0						
Zoomorphs	Chitinozoa	0					
	Zooecasts	0					
OTHER	Zooecasts indet	0					
			total counts			180	

Detailed Kerogen Distribution

- Equant
- Lath
- Corroded
- Non Biostructured
- Cuticle
- Membrane
- Cross hat
- Striate
- Striped
- Banded
- Pitted
- Fungal Hyphae
- Slcereids
- fungal spore
- SPORES
- POLLEN grains
- bisaccate grains
- Paly indet
- Resin
- Macrophyte Tissues
- AOM non flouesc.
- AOM flouesc.
- DOM
- Microbial Mats
- Botryococcus
- Pediastrum
- Zygnemataceaea
- Algae/Bacteria
- Dinocysts
- Prasinophytes
- Acritarchs
- Foraminifera
- Scolecodonts
- Chitinozoa
- Zooecasts indet

Dinocyst morphology

1

0% 20% 40% 60% 80% 100%

chorat proximochorat proximat cavat

Main kerogen groups

75 0 0 0 0 0

Phytoclats Sporomorphs Freshwater palynomorphs Marine Microplankton AOM Zoomorphs DOM

Phytoclats size composition

60 50 40 30 20 10 0

opaque equant opaque blade translucent non structured translucent structured

>80 20-80 20

cont / mar ratio

100 % continental 0

-4 -3 -2 -1 0 1 2 3 4

0 % marin 100

High to Medium: blue-green
High to Medium: green white
High to Medium: white - yellow
High to Low: yellow
Low: dark yellow orange brown
no fluorescence

6. Data export

If you may want to export the counting data for the use in special software like STRATABugs or WellCad, you can use the export button within the input sheet. The relevant data from the sheet countings then will be saved as Excel xlsx file (without macros) within the actual Kerogenia directory. The name of the export file is KEROGENIA_Export_Wellname (The well name will be taken from the top of the sheet "input").

7. Delete all data

For use of complete reset only. **All data will be deleted and cannot be recovered.** To start press



8. Trouble shooting

It may happen, that opening Excel workbooks with macros are blocked.

You can try to solve this problem with three methods:

Method 1:

Change macro settings in the Trust Center

Macro settings are located in the Trust Center. However, if your device is managed by your work or school the system administrator might prevent anyone from changing settings.

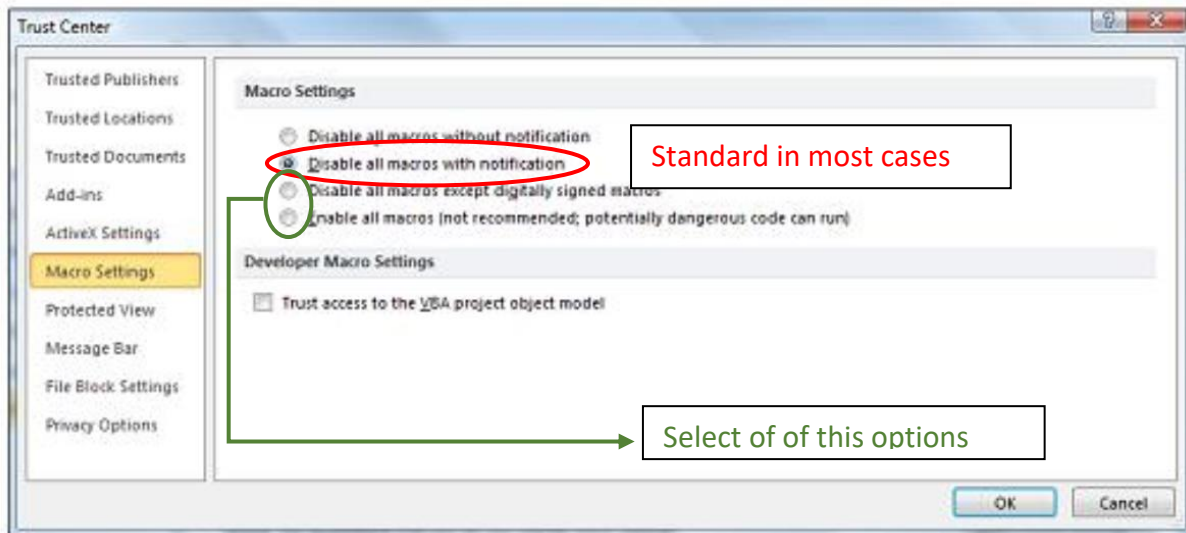
Important: When you change your macro settings in the Trust Center, they are changed only for the Microsoft 365 program that you are currently using. The macro settings are not changed for all your Microsoft 365 programs.

Click the File tab.

Click Options.

Click Trust Center, and then click Trust Center Settings.

In the Trust Center, click Macro Settings.

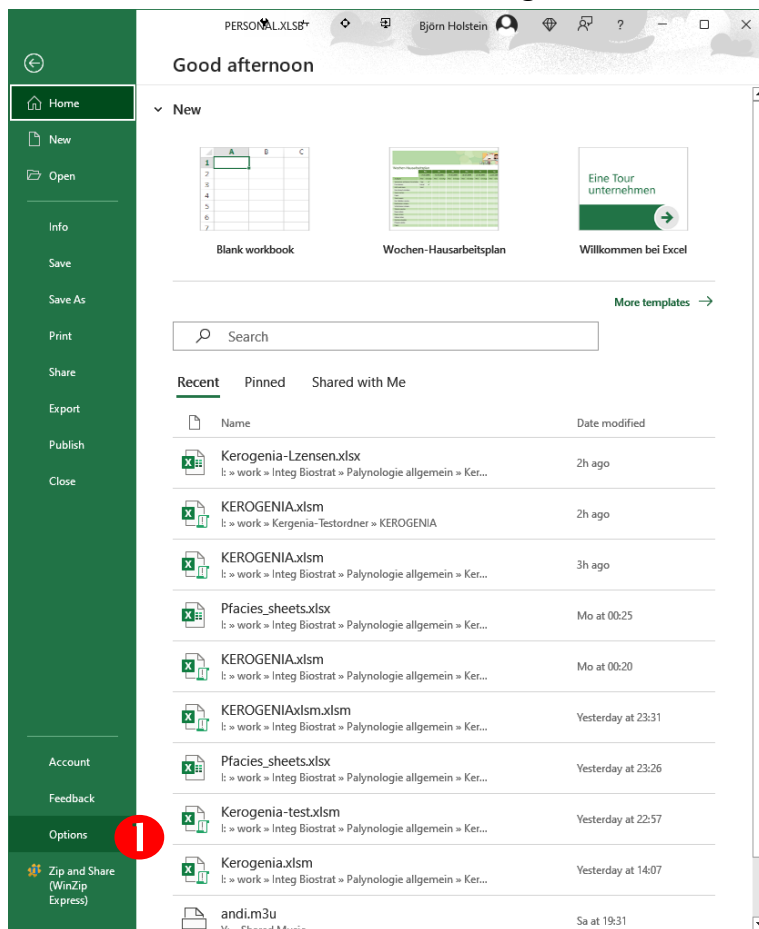


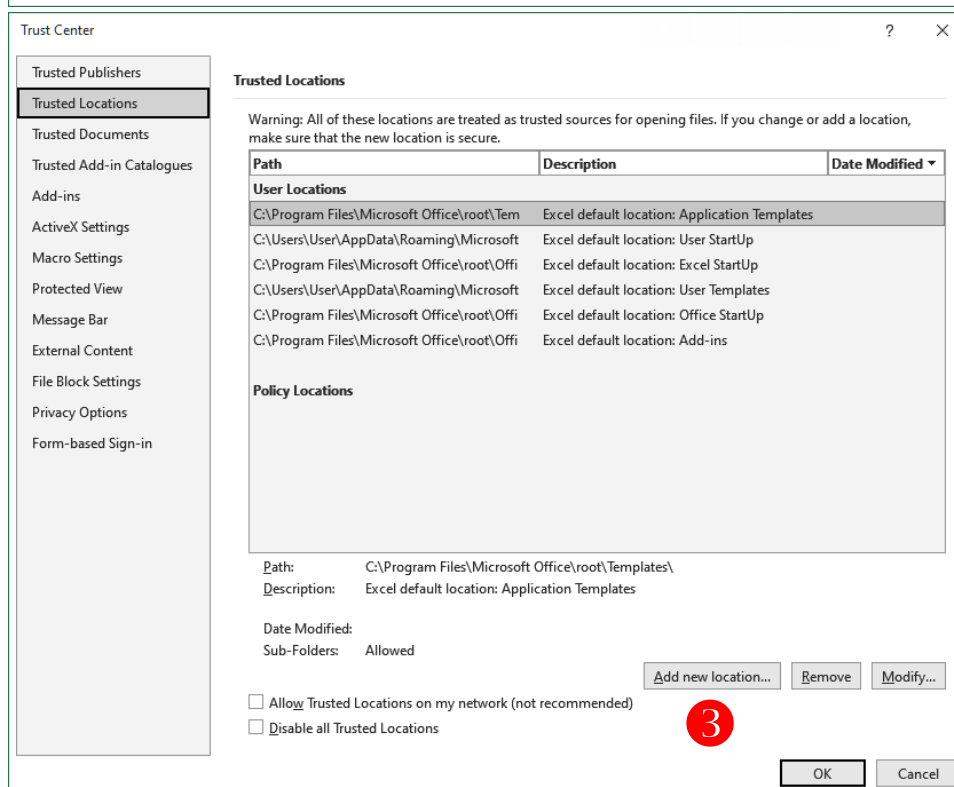
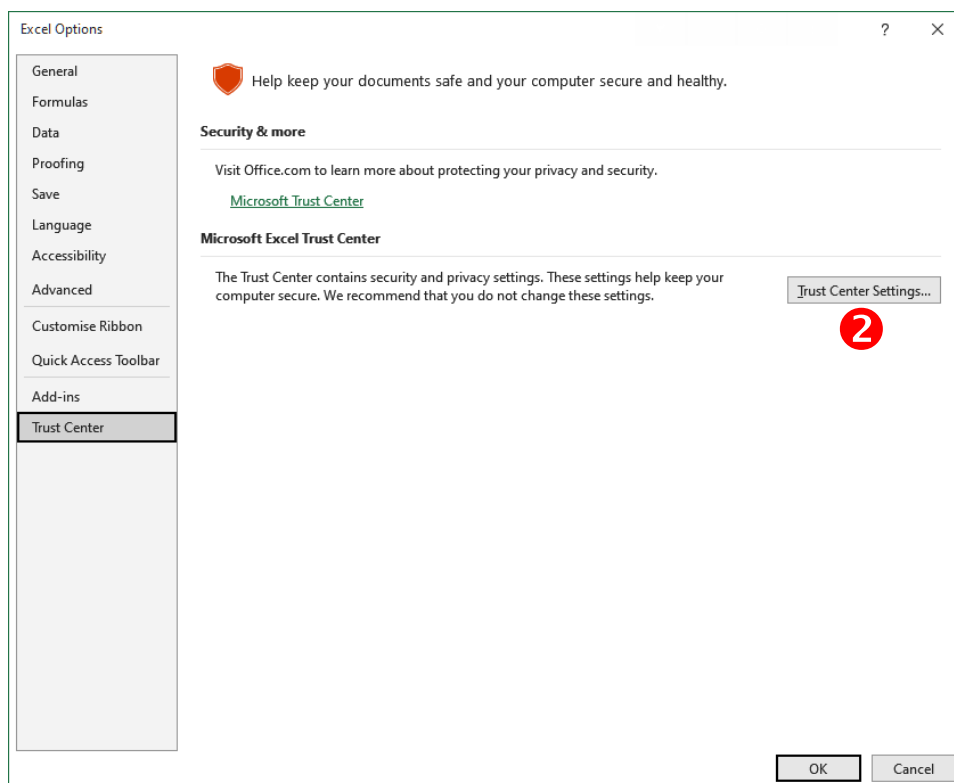
Method 2

Add a trusted location (directory)

In your Office app, click **File > Options.** **1**

Click **Trust Center > Trust Center Settings** **2** > **Trusted Locations** > **Add a directory** **3**.





Method 3

To unblock a macro that is blocked by Microsoft, this is what you need to do:
Close the workbook containing the blocked macro.

In File Explorer, browser to the location where the workbook is saved.

Right-click the file, and select *Properties* from the context menu.

In the *Properties* dialog box, check the Unblock box, and then click OK.

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It is allowed to copy the KEROGENIA tool in the frame of your workgroup and to share for the work with your organization. It is forbidden to share outside your organization.

Every unauthorised change of the VBA code may lead to malfunctions.

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