

# OPA Excel Tips: Merging cells (concatenation)

Sometimes it is useful to merge the values from two or more cells in a spreadsheet (Example 1), or to add additional text to a cell value e.g. to create a list of ApplIDs separated by commas (Example 2). The “Concatenate” function in Excel can be used for this.

## Example 1: Creating complete grant numbers.

In this example the Transplantation dataset is used. The dataset contains all the information contained in a complete project number but spread across three columns. The ‘Concatenate’ function within Excel can be used to merge these cells together into a new cell.

First type “=concatenate(” in a new cell.

Appl Id	Type	Acvt	Project	PI Name(:FY	IC	Title	Abstract	SA Text	Awd Tot \$
7987780	2	R01	HL075353-06	MESSINA, 2010	HL	Mesenchy	DESCR	1 I. Spe	\$411,250
8435690	1	R21	HL113777-01A1	LIBONATI, 2013	HL	Exercise a	DESCR	A. Spec	\$200,000
8245505	1	R01	AR061460-01A1	FISHER, JC 2011	AR	Applicatio	DESCR	II. SPECI	\$355,245
8159876	1	R01	EY021768-01	KAO, WIN 2011	EY	Cell Thera	DESCR	P.I. Kao	\$530,406
8400215	1	R01	DK095001-01A1	MIETHKE, J 2012	DK	The role o	DESCR	SPECIFIC	\$333,825
8415397	1	U18	TR000536-01	LYNCH, JC 2012	TR	Modeling	DESCR	SPECIFIC	\$375,600
7672945	1	R43	DK083832-01	POO, RAN 2009	DK	A perfluor	DESCR	1. SPECIF	\$100,000
8108873	1	R01	HL103709-01A1	TZANAKAK 2011	HL	Bioprocess	DESCR	1. SPECIF	\$379,711
8504313	1	R01	DK098787-01	BUCHWAL 2012	DK	Culturally	DESCR	2. SPECIF	\$211,602
8508395	1	R21	AA021225-01A1	CALLACI, 2013	AA	Alcohol E	DESCR	2. SPECIF	\$217,063
7581820	2	R01	AI053193-06A1	RIDDELL, S 2009	AI	CD8+ T C	DESCR	2. SPECIF	\$502,469
7731198	1	R01	CA136551-01A1	RIDDELL, S 2009	CA	Targeted	DESCR	2. SPECIF	\$551,563
8371082	2	R01	DK079713-06	ARRIOLA, 2012	DK	Project Ac	DESCR	2. Specif	\$240,878
7735633	2	R01	AI052079-05A2	KEARNS-J 2009	AI	Non-Hum	DESCR	2. Specif	\$400,000
8591825	1	R41	OD018403-01	MARSH, H 2013	OD	CDX-301	DESCR	2.2 SPEC	\$100,000
7785904	1	R01	NS045109-01A1	RFLI AMKC 2009	NS	A Retinoc	DESCR	A Retinoc	\$338,994

Select the cells you wish to combine, separating each cell with a “,”. It is also possible to include text in between cell values. In the example below, a space (“ ”) is inserted between Type and Activity Code and between Activity Code and Project number. Other values could be entered between the quotation marks.

Appl Id	Type	Acvt	Project	PI Name(:FY	IC	Title	Abstract	SA Text	Awd Tot \$
7987780	2	R01	HL075353-06	MESSINA, 2010	HL	Mesenchy	DESCR	1 I. Spe	\$411,250
8435690	1	R21	HL113777-01A1	LIBONATI, 2013	HL	Exercise a	DESCR	A. Spec	\$200,000
8245505	1	R01	AR061460-01A1	FISHER, JC 2011	AR	Applicatio	DESCR	II. SPECI	\$355,245
8159876	1	R01	EY021768-01	KAO, WIN 2011	EY	Cell Thera	DESCR	P.I. Kao	\$530,406
8400215	1	R01	DK095001-01A1	MIETHKE, J 2012	DK	The role o	DESCR	SPECIFIC	\$333,825
8415397	1	U18	TR000536-01	LYNCH, JC 2012	TR	Modeling	DESCR	SPECIFIC	\$375,600
7672945	1	R43	DK083832-01	POO, RAN 2009	DK	A perfluor	DESCR	1. SPECIF	\$100,000
8108873	1	R01	HL103709-01A1	TZANAKAK 2011	HL	Bioprocess	DESCR	1. SPECIF	\$379,711
8504313	1	R01	DK098787-01	BUCHWAL 2012	DK	Culturally	DESCR	2. SPECIF	\$211,602
8508395	1	R21	AA021225-01A1	CALLACI, 2013	AA	Alcohol E	DESCR	2. SPECIF	\$217,063
7581820	2	R01	AI053193-06A1	RIDDELL, S 2009	AI	CD8+ T C	DESCR	2. SPECIF	\$502,469
7731198	1	R01	CA136551-01A1	RIDDELL, S 2009	CA	Targeted	DESCR	2. SPECIF	\$551,563
8371082	2	R01	DK079713-06	ARRIOLA, 2012	DK	Project Ac	DESCR	2. Specif	\$240,878

Once the formula is entered, the merged value appears in the new cell.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Appl ID	Type	Actv	Project	PI Name(:FY	IC	Title	Abstract	SA Text	Awd Tot	\$	
2	7987780	2 R01	HL075353-06		MESSINA,	2010 HL	Mesenchy	DESCR	1 I. Spe	\$411,250	2 R01	HL075353-06
3	8435690	1 R21	HL113777-01A1		LIBONATI,	2013 HL	Exercise a	DESCR	A. Spec	\$200,000	1 R21	HL113777-01A1
4	8245505	1 R01	AR061460-01A1		FISHER, JC	2011 AR	Applicatio	DESCR	II. SPECI	\$355,245	1 R01	AR061460-01A1
5	8159876	1 R01	EY021768-01		KAO, WIN	2011 EY	Cell Thera	DESCR	P.I. Kao	\$530,406	1 R01	EY021768-01
6	8400215	1 R01	DK095001-01A1		MIETHKE,	2012 DK	The role o	DESCR	SPECIFIC	\$333,825	1 R01	DK095001-01A1
7	8415397	1 U18	TR000536-01		LYNCH, JC	2012 TR	Modeling	DESCR	SPECIFIC	\$375,600	1 U18	TR000536-01
8	7672945	1 R43	DK083832-01		POO, RAN	2009 DK	A perfluor	DESCR	1. SPECIF	\$100,000	1 R43	DK083832-01
9	8108873	1 R01	HL103709-01A1		TZANAKAK	2011 HL	Bioproc	DESCR	1. SPECIF	\$379,711	1 R01	HL103709-01A1
10	8504313	1 R01	DK098787-01		BUCHWAL	2012 DK	Culturally	DESCR	2. SPECIF	\$211,602	1 R01	DK098787-01
11	8508395	1 R21	AA021225-01A1		CALLACI,	2013 AA	Alcohol E	DESCR	2. SPECIF	\$217,063	1 R21	AA021225-01A1
12	7581820	2 R01	AI053193-06A1		RIDDELL, S	2009 AI	CD8+ T C	DESCR	2. SPECIF	\$502,469	2 R01	AI053193-06A1
13	7731198	1 R01	CA136551-01A1		RIDDELL, S	2009 CA	Targeted	DESCR	2. SPECIF	\$551,563	1 R01	CA136551-01A1
14	8371082	2 R01	DK079713-06		ARRIOLA,	2012 DK	Project A	DESCR	2. Specif	\$240,878	2 R01	DK079713-06

Copying the formula and pasting to the whole column creates complete grant number for each row in the spreadsheet.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Appl ID	Type	Actv	Project	PI Name(:FY	IC	Title	Abstract	SA Text	Awd Tot	\$	
2	7987780	2 R01	HL075353-06		MESSINA,	2010 HL	Mesenchy	DESCR	1 I. Spe	\$411,250	2 R01	HL075353-06
3	8435690	1 R21	HL113777-01A1		LIBONATI,	2013 HL	Exercise a	DESCR	A. Spec	\$200,000	1 R21	HL113777-01A1
4	8245505	1 R01	AR061460-01A1		FISHER, JC	2011 AR	Applicatio	DESCR	II. SPECI	\$355,245	1 R01	AR061460-01A1
5	8159876	1 R01	EY021768-01		KAO, WIN	2011 EY	Cell Thera	DESCR	P.I. Kao	\$530,406	1 R01	EY021768-01
6	8400215	1 R01	DK095001-01A1		MIETHKE,	2012 DK	The role o	DESCR	SPECIFIC	\$333,825	1 R01	DK095001-01A1
7	8415397	1 U18	TR000536-01		LYNCH, JC	2012 TR	Modeling	DESCR	SPECIFIC	\$375,600	1 U18	TR000536-01
8	7672945	1 R43	DK083832-01		POO, RAN	2009 DK	A perfluor	DESCR	1. SPECIF	\$100,000	1 R43	DK083832-01
9	8108873	1 R01	HL103709-01A1		TZANAKAK	2011 HL	Bioproc	DESCR	1. SPECIF	\$379,711	1 R01	HL103709-01A1
10	8504313	1 R01	DK098787-01		BUCHWAL	2012 DK	Culturally	DESCR	2. SPECIF	\$211,602	1 R01	DK098787-01
11	8508395	1 R21	AA021225-01A1		CALLACI,	2013 AA	Alcohol E	DESCR	2. SPECIF	\$217,063	1 R21	AA021225-01A1
12	7581820	2 R01	AI053193-06A1		RIDDELL, S	2009 AI	CD8+ T C	DESCR	2. SPECIF	\$502,469	2 R01	AI053193-06A1
13	7731198	1 R01	CA136551-01A1		RIDDELL, S	2009 CA	Targeted	DESCR	2. SPECIF	\$551,563	1 R01	CA136551-01A1
14	8371082	2 R01	DK079713-06		ARRIOLA,	2012 DK	Project A	DESCR	2. Specif	\$240,878	2 R01	DK079713-06
15	7735633	2 R01	AI052079-05A2		KEARNS-J	2009 AI	Non-Hum	DESCR	2. Specif	\$400,000	2 R01	AI052079-05A2
16	8591825	1 R41	OD018403-01		MARSH, H	2013 OD	CDX-301	DESCR	2.2 SPEC	\$100,000	1 R41	OD018403-01
17	7785204	1 R01	NS065109-01A1		BELLAMKC	2009 NS	A Rationc	DESCR	A Ration	\$338,926	1 R01	NS065109-01A1
18	7741820	1 R01	DK083411-01A1		LIN, FANG	2009 DK	STEM CELL	DESCR	a. Specif	\$376,800	1 R01	DK083411-01A1

## Example 2: Creating a list of Comma Separated Values.

To create a list of ApplIDs separated by commas, type “=concatenate(” in a new cell at the top of the list. Select the cell containing the ApplID, add a comma, then add the text you wish to include “,” before closing the brackets.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Appl Id	Type	Actv	Project	PI Name('FY	IC	Title	Abstract	SA Text	Awd Tot \$			
2	7987780	2	R01	HL075353-06	MESSINA,	2010	HL	Mesenchy	DESCR	1 I. Spe	\$411,250	=concatenate(A2,","	
3	8435690	1	R21	HL113777-01A1	LIBONATI,	2013	HL	Exercise a	DESCR	A. Spec	\$200,000		
4	8245505	1	R01	AR061460-01A1	FISHER, JC	2011	AR	Applicatio	DESCR	II. SPECI	\$355,245		
5	8159876	1	R01	EY021768-01	KAO, WIN	2011	EY	Cell Therc	DESCR	P.I. Kao	\$530,406		
6	8400215	1	R01	DK095001-01A1	MIETHKE,	2012	DK	The role o	DESCR	SPECIFIC	\$333,825		
7	8415397	1	U18	TR000536-01	LYNCH, JC	2012	TR	Modeling	DESCR	SPECIFIC	\$375,600		
8	7672945	1	R43	DK083832-01	POO, RAN	2009	DK	A perfluor	DESCR	1. SPECIF	\$100,000		
9	8108873	1	R01	HL103709-01A1	TZANAKAK	2011	HL	Bioproces	DESCR	1. SPECIF	\$379,711		
10	8504313	1	R01	DK098787-01	BUCHWAL	2012	DK	Culturally	DESCR	2. SPECIF	\$211,602		
11	8508395	1	R21	AA021225-01A1	CALLACI	2013	AA	Alcohol E	DESCR	2. SPECIF	\$217,063		

Copying the formula to the rest of the data produces the results below.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Appl Id	Type	Actv	Project	PI Name('FY	IC	Title	Abstract	SA Text	Awd Tot \$		
2	7987780	2	R01	HL075353-06	MESSINA,	2010	HL	Mesenchy	DESCR	1 I. Spe	\$411,250	7987780
3	8435690	1	R21	HL113777-01A1	LIBONATI,	2013	HL	Exercise a	DESCR	A. Spec	\$200,000	8435690
4	8245505	1	R01	AR061460-01A1	FISHER, JC	2011	AR	Applicatio	DESCR	II. SPECI	\$355,245	8245505
5	8159876	1	R01	EY021768-01	KAO, WIN	2011	EY	Cell Therc	DESCR	P.I. Kao	\$530,406	8159876
6	8400215	1	R01	DK095001-01A1	MIETHKE,	2012	DK	The role o	DESCR	SPECIFIC	\$333,825	8400215
7	8415397	1	U18	TR000536-01	LYNCH, JC	2012	TR	Modeling	DESCR	SPECIFIC	\$375,600	8415397
8	7672945	1	R43	DK083832-01	POO, RAN	2009	DK	A perfluor	DESCR	1. SPECIF	\$100,000	7672945
9	8108873	1	R01	HL103709-01A1	TZANAKAK	2011	HL	Bioproces	DESCR	1. SPECIF	\$379,711	8108873
10	8504313	1	R01	DK098787-01	BUCHWAL	2012	DK	Culturally	DESCR	2. SPECIF	\$211,602	8504313
11	8508395	1	R21	AA021225-01A1	CALLACI	2013	AA	Alcohol E	DESCR	2. SPECIF	\$217,063	8508395
12	7581820	2	R01	AI053193-06A1	RIDDELL, S	2009	AI	CD8+ T C	DESCR	2. SPECIF	\$502,469	7581820
13	7731198	1	R01	CA136551-01A1	RIDDELL, S	2009	CA	Targeted	DESCR	2. SPECIF	\$551,563	7731198
14	8371082	2	R01	DK079713-06	ARRIOLA,	2012	DK	Project Ac	DESCR	2. Specif	\$240,878	8371082
15	7735633	2	R01	AI052079-05A2	KEARNS-JC	2009	AI	Non-Hum	DESCR	2. Specif	\$400,000	7735633
16	8591825	1	R41	OD018403-01	MARSH, H	2013	OD	CDX-301	DESCR	2.2 SPEC	\$100,000	8591825
17	7785204	1	R01	NS065109-01A1	BELLAMKC	2009	NS	A Rationc	DESCR	A Ration	\$338,926	7785204

Note that you may want to remove the formula in the new column. This can be done by clicking on the column header 'L', right click, select 'Copy' then 'Paste Special' and select the 'Values' option (the icon with the number on it). This will remove the formula from the spreadsheet.

This column of data can then be copied and saved as a new dataset, or pasted into a search tool that requires a list of identifying codes separated by commas.

Appl Id	Type	Actv	Project	PI Name	IC	Title	Abstract	SA Text	Awd Tot
7987780	2	R01	HL075353-06	MESSINA,	2010 HL	Mesenchy	DESCR	1 I. Spe	\$411,250
8435690	1	R21	HL113777-01A1	LIBONATI,	2013 HL	Exercise a	DESCR	A. Spec	\$200,000
8245505	1	R01	AR061460-01A1	FISHER, JC	2011 AR	Applicatio	DESCR	II. SPECI	\$355,245
8159876	1	R01	EY021768-01	KAO, WIN	2011 EY	Cell Therc	DESCR	P.I. Kao	\$530,406
8400215	1	R01	DK095001-01A1	MIETHKE,	2012 DK	The role o	DESCR	SPECIFIC	\$333,825
8415397	1	U18	TR000536-01	LYNCH, JC	2012 TR	Modeling	DESCR	SPECIFIC	\$375,600
7672945	1	R43	DK083832-01	POO, RAN	2009 DK	A perfluor	DESCR	1. SPECIF	\$100,000
8108873	1	R01	HL103709-01A1	TZANAKAK	2011 HL	Bioproces	DESCR	1. SPECIF	\$379,711
8504313	1	R01	DK098787-01	BUCHWAL	2012 DK	Culturally	DESCR	2. SPECIF	\$211,602
8508395	1	R21	AA021225-01A1	CALLACI,	2013 AA	Alcohol E	DESCR	2. SPECIF	\$217,063
7581820	2	R01	AI053193-06A1	RIDDELL,	2009 AI	CD8+ T C	DESCR	2. SPECIF	\$502,469
7731198	1	R01	CA136551-01A1	RIDDELL,	2009 CA	Targeted	DESCR	2. SPECIF	\$551,563
8371082	2	R01	DK079713-06	ARRIOLA,	2012 DK	Project A	DESCR	2. Specif	\$240,878
7735633	2	R01	AI052079-05A2	KEARNS-J	2009 AI	Non-Hum	DESCR	2. Specif	\$400,000
8591825	1	R41	OD018403-01	MARSH, H	2013 OD	CDX-301	DESCR	2.2 SPEC	\$100,000
7785204	1	R01	NS065109-01A1	BELLAMKC	2009 NS	A Rationc	DESCR	A Ration	\$338,926
7741820	1	R01	DK083411-01A1	LIN, FANG	2009 DK	STEM CELL	DESCR	a. Specif	\$376,800

## More help

As with other functions in Excel, clicking on the word “Concatenate” brings up a link to the help text.

Appl Id	Type	Actv	Project	PI Name	IC	Title	Abstract	SA Text	Awd Tot
7987780	2	R01	HL075353-06	MESSINA,	2010 HL	Mesenchy	DESCR	1 I. Spe	\$411,250
8435690	1	R21	HL113777-01A1	LIBONATI,	2013 HL	Exercise a	DESCR	A. Spec	\$200,000
8245505	1	R01	AR061460-01A1	FISHER, JC	2011 AR	Applicatio	DESCR	II. SPECI	\$355,245
8159876	1	R01	EY021768-01	KAO, WIN	2011 EY	Cell Therc	DESCR	P.I. Kao	\$530,406
8400215	1	R01	DK095001-01A1	MIETHKE,	2012 DK	The role o	DESCR	SPECIFIC	\$333,825
8415397	1	U18	TR000536-01	LYNCH, JC	2012 TR	Modeling	DESCR	SPECIFIC	\$375,600
7672945	1	R43	DK083832-01	POO, RAN	2009 DK	A perfluor	DESCR	1. SPECIF	\$100,000
8108873	1	R01	HL103709-01A1	TZANAKAK	2011 HL	Bioproces	DESCR	1. SPECIF	\$379,711
8504313	1	R01	DK098787-01	BUCHWAL	2012 DK	Culturally	DESCR	2. SPECIF	\$211,602
8508395	1	R21	AA021225-01A1	CALLACI,	2013 AA	Alcohol E	DESCR	2. SPECIF	\$217,063
7581820	2	R01	AI053193-06A1	RIDDELL,	2009 AI	CD8+ T C	DESCR	2. SPECIF	\$502,469
7731198	1	R01	CA136551-01A1	RIDDELL,	2009 CA	Targeted	DESCR	2. SPECIF	\$551,563
8371082	2	R01	DK079713-06	ARRIOLA,	2012 DK	Project A	DESCR	2. Specif	\$240,878

Clicking on the link brings up the Excel help text:

**CONCATENATE function**

Use **CONCATENATE**, one of the text functions, to join two or more text strings into one string.

**IMPORTANT!** In Excel 2016, Excel Mobile, and Excel Online, this function has been replaced with the **CONCAT** function. Although the **CONCATENATE** function is still available for backward compatibility, you should consider using **CONCAT** from now on. This is because **CONCATENATE** may not be available in future versions of Excel.

Syntax: **CONCATENATE**(text1, [text2], ...)

For example:

- =CONCATENATE("Stream population for ", A2, ", ", A3, ", ", A4, " miles")
- =CONCATENATE(B2, "C3")

Argument name	Description
text1 (required)	The first item to join. The item can be a text value, number, or cell reference.