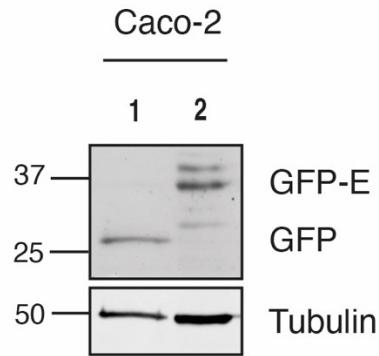# Avila-Flores et al., Supplementary material

Supplemental Table 1 Protein interactors classified by biological process

| Leukocyte degranulation	Myeloid cell activation in immune response	Immune response	Neutrophil activation involved in immune response	Neutrophil degranulation	Exocytosis	Secretion	Protein targeting to membrane	Cotranslational protein targeting to membrane	Establishment of protein localization to endoplasmic reticulum	Translational initiation	Viral process	Viral transcription
		ANKHD1								ABCF1	C1QBP	
ANO6	ANO6	ANO6	ANO6	ANO6	ANO6	ANO6				EIF1	CALCOCO2	
		ATP6V0A2								EIF2B3	CD55	
		BCL2								EIF3M	CDK5RAP3	
BST1	BST1	BST1	BST1	BST1	BST1	BST1				EIF4E2	CHMP1A	
		C17orf62								EIF4G3	DHX58	
		C1QBP					EXOC4				DOCK2	
		CALCOCO2					GOLGA7				EIF3M	
CAND1	CAND1	CAND1	CAND1	CAND1	CAND1	CAND1				LARP1	ELMO1	
		CCR1			CCR1	CCR1			RAB3GAP1		F11R	
					CD109	CD109	RABGEF1				HCK	
CD44	CD44	CD44	CD44	CD44	CD44	CD44	RPL10	RPL10	RPL10	RPL10	IL16	
CD55	CD55	CD55	CD55	CD55	CD55	CD55	RPL10A	RPL10A	RPL10A	RPL10A	ITCH	
CSNK2B	CSNK2B	CSNK2B	CSNK2B	CSNK2B	CSNK2B	CSNK2B	RPL18A	RPL18A	RPL18A	RPL18A	ITGAL	
CSTB	CSTB	CSTB	CSTB	CSTB	CSTB	CSTB	RPL28	RPL28	RPL28	RPL28	KPNA2	
CYFIP1	CYFIP1	CYFIP1	CYFIP1	CYFIP1	CYFIP1	CYFIP1	RPL39	RPL39	RPL39	RPL39	LYN	
		DHX58					RPL4	RPL4	RPL4	RPL4	MOV10	
DIAPH1	DIAPH1	DIAPH1	DIAPH1	DIAPH1	DIAPH1	DIAPH1	RPL9	RPL9	RPL9	RPL9	NUP62	NUP62
DOCK2	DOCK2	DOCK2	DOCK2	DOCK2	DOCK2	DOCK2	RPLP1	RPLP1	RPLP1	RPLP1	NUP98	NUP98
		EXOSC3			EXOC4	EXOC4	RPS15	RPS15	RPS15	RPS15	PHB2	
						GNAS	RPS24	RPS24	RPS24	RPS24	PI4KA	
GOLGA7	GOLGA7	GOLGA7	GOLGA7	GOLGA7	GOLGA7	GOLGA7	RPS29	RPS29	RPS29	RPS29	PML	
HCK		HCK			HCK	HCK	RPS3A	RPS3A	RPS3A	RPS3A	PTBP1	
HVCN1	HVCN1	HVCN1	HVCN1	HVCN1	HVCN1	HVCN1	RPS4X	RPS4X	RPS4X	RPS4X	RAE1	RAE1
		IFI44L					RPS8	RPS8	RPS8	RPS8	RPL10	RPL10
IGF2R	IGF2R	IGF2R	IGF2R	IGF2R	IGF2R	IGF2R	SDCBP				RPL10A	RPL10A
		IL16					SEC61A1	SEC61A1	SEC61A1		RPL18A	RPL18A
		ITCH					SEC63	SEC63	SEC63		RPL28	RPL28
ITGAL	ITGAL	ITGAL	ITGAL	ITGAL	ITGAL	ITGAL	SRPR	SRPR			RPL39	RPL39
LAMTOR1	LAMTOR1	LAMTOR1	LAMTOR1	LAMTOR1	LAMTOR1	LAMTOR1	SSR1	SSR1			RPL4	RPL4
					LIN7A	LIN7A	22	18	18	21	RPL9	RPL9
LYN	LYN	LYN			LYN	LYN					RPLP1	RPLP1
						M6PR					RPS15	RPS15
MAGT1	MAGT1	MAGT1	MAGT1	MAGT1	MAGT1	MAGT1					RPS24	RPS24
		MEF2C									RPS29	RPS29
		MEFV									RPS3A	RPS3A
MGST1	MGST1	MGST1	MGST1	MGST1	MGST1	MGST1					RPS4X	RPS4X
		MYD88			MYO5A	MYO5A					RPS8	RPS8
NCKAP1L	NCKAP1L	NCKAP1L	NCKAP1L	NCKAP1L	NCKAP1L	NCKAP1L					SCRIB	
		NONO									SF3B2	
		PARP9									SND1	
		PML									SSRP1	
						PREB					STAT2	
PSMA5	PSMA5	PSMA5	PSMA5	PSMA5	PSMA5	PSMA5					STAU1	
PSMD1	PSMD1	PSMD1	PSMD1	PSMD1	PSMD1	PSMD1					SYK	
					RAB11FIP1	RAB11FIP1					TAP2	
RAP2B	RAP2B	RAP2B	RAP2B	RAP2B	RAP2B	RAP2B					TFRC	
		RBM14			SCIN	SCIN					TRIM22	
		RPL39			SCRIB	SCRIB					USP15	
SDCBP	SDCBP	SDCBP	SDCBP	SDCBP	SDCBP	SDCBP					USP7	
		SEC61A1									VAMP8	
		SFPQ				SLC29A1					VTA1	
SLC2A5	SLC2A5	SLC2A5	SLC2A5	SLC2A5	SLC2A5	SLC2A5					XPO5	
		STAT2									53	17
		STAT6										
STOM	STOM	STOM	STOM	STOM	STOM	STOM						
					STX11	STX11						
STXBP2	STXBP2	STXBP2	STXBP2	STXBP2	STXBP2	STXBP2						
STXBP3	STXBP3	STXBP3	STXBP3	STXBP3	STXBP3	STXBP3						
SURF4	SURF4	SURF4	SURF4	SURF4	SURF4	SURF4						
	SYK	SYK	SYK		SYK	SYK						
		TAP2										
TCIRG1	TCIRG1	TCIRG1	TCIRG1	TCIRG1	TCIRG1	TCIRG1						
					TMEM167A	TMEM167A						
TMEM30A	TMEM30A	TMEM30A	TMEM30A	TMEM30A	TMEM30A	TMEM30A						
TMEM63A	TMEM63A	TMEM63A	TMEM63A	TMEM63A	TMEM63A	TMEM63A						
TOLLIP	TOLLIP	TOLLIP	TOLLIP	TOLLIP	TOLLIP	TOLLIP						
		TRIM22										
VAMP8	VAMP8	VAMP8	VAMP8	VAMP8	VAMP8	VAMP8						
VAT1	VAT1	VAT1	VAT1	VAT1	VAT1	VAT1						
35	35	62	34	33	47	51						

Supplemental Table S1. Classification of GFP-SARS-CoV-2 E protein interactors according to GoTERM categories of biological process . Proteins classified into the distinct GoTERM categories are listed; the total number of proteins is indicated at the bottom. Color assigned to the different GoTERM categories as shown in Figure 3A.

Supplemental Table 2 Interactors classified by cellular region

Cell junction	Synapse	Endomembrane system	Endoplasmic reticulum membrane	Cytoplasmic vesicle	Cytoplasmic vesicle membrane	Secretory vesicle	Secretory granule membrane	Extracellular exosome	Specific granule	Cytosolic ribosome	Ribosome	Ribonucleoprotein complex
ADD1	ADD1	ABCF1	ACSL3	AFTPH	AFTPH	ANO6	ANO6	ABHD14B	ANO6	RPL10	ABCF1	ABCF1
ASAP1	ASAP1	ACSL3	AGTRAP	AGFG1	AGTRAP	ATP6V0A2	BST1	ATP2B1	ATP2B1	RPL10A	NUFIP2	DHX15
ATP2B1	ATP2B1	AFTPH	ATP6AP1	AGTRAP	ANO6	ATP6V0D1	CD109	ATP6AP1	BST1	RPL18A	RPL10	DRG1
ATP6V0D1	ATP6V0D1	AGFG1	BCL2	ANO6	ANP32E	BST1	CD38	ATP6V0D1	CYFIP1	RPL28	RPL10A	EIF1
C1QBP	C1QBP	AGTRAP	C17orf62	ANP32E	ATP2B1	CD109	CD44	ATP6V1C1	DOCK2	RPL39	RPL18A	EIF3M
CD44	CTNND1	ANO6	CERS6	ARAP1	ATP6AP1	CD38	DIAPH1	ATP6V1E1	HVCN1	RPL4	RPL28	GPKOW
CORO2B	CYFIP1	ARAP1	COPE	ATP6AP1	ATP6V0A2	CD44	HVCN1	B3GAT3	ITGAL	RPL9	RPL39	HNRNPA0
CTNND1	DAGLB	ATP6AP1	DDRGK1	ATP6V0A2	ATP6V0D1	CD55	IGF2R	BLMH	LAMTOR1	RPLP1	RPL4	HNRNPDL
CYFIP1	DENND1A	ATP6V0A2	DHCR24	ATP6V0D1	CD109	COPE	ITGAL	BST1	RAP2B	RPS15	RPL9	HNRNPL
DAGLB	EXOC4	ATP6V0D1	DHRS4	ATP6V1C1	CD38	CSNK2B	LAMTOR1	CAND1	SLC2A5	RPS24	RPLP1	NCBP1
DCTN4	GABBR2	ATP6V1C1	DIAPH1	ATP6V1E1	CD44	CSTB	MAGT1	CD109	STOM	RPS29	RPS15	NOB1
DENND1A	GRID2IP	ATP6V1E1	EDEM1	BST1	CD55	CYFIP1	MGST1	CD38	STXBP2	RPS3A	RPS24	NUFIP2
EXOC4	ILK	B3GAT3	ERMP1	CALCOCO2	COPE	DIAPH1	RAP2B	CD44	VAMP8	RPS4X	RPS29	NUP62
F11R	KPNA2	BCL2	FAF1	CAND1	CYFIP1	DOCK2	STOM	CD55		RPS8	RPS3A	NUP98
FHOD1	LIN7A	BST1	FDFT1	CD109	DENND1A	GOLGA7	STXBP2	CHMP1A			RPS4X	PSMA1
GABBR2	LYN	C17orf62	IKBIP	CD38	DIAPH1	HVCN1	TCIRG1	CPNE5			RPS8	RBM14
GRID2IP	MAP1S	CAND1	KTN1	CD44	HVCN1	IGF2R	TMEM30A	CSNK2B			RRBP1	RBM22
HCK	MEF2C	CBX3	LRRC8C	CD55	IGF2R	ITGAL	TMEM63A	CSTB			SF1	RBMX
IGF2R	MOB4	CD109	MAGT1	COPE	ITGAL	LAMTOR1	VAMP8	CTNND1				RPL10
ILK	MYO5A	CD38	MGST3	CORO7	LAMTOR1	M6PR		CYFIP1				RPL10A
KIAA1462	NSMF	CD44	NOMO2	CSNK2B	M6PR	MAGT1		DNAJA2				RPL18A
KPNA2	PHB2	CD55	PCYT1A	CSTB	MAGT1	MGST1		DOCK2				RPL28
LIN7A	PPFIBP1	CERS6	PIGK	CYFIP1	MGST1	MYO5A		DPYSL2				RPL39
LYN	PTPRD	CHMP1A	PLP2	DENND1A	NCALD	NCKAP1L		F11R				RPL4
MAP1S	RAB3GAP1	CNIH4	PML	DIAPH1	NCKAP1L	NECAP1		GART				RPL9
MAP4K4	RAB4A	COPE	POR	DOCK2	NECAP1	PSMA5		GNAS				RPLP1
MEF2C	RPL10A	CORO7	PREB	F11R	PSMA5	PSMD1		GOLGA7				RPS15
MMP14	RPL18A	CSDE1	PTDSS1	FAM91A1	PSMD1	RAB4A		GSTK1				RPS24
MOB4	RPS3A	CSNK2B	RAB3GAP1	FKBP15	RAB11FIP1	RAP2B		HNRNPL				RPS29
MYO5A	RPS4X	CSTB	RPS29	GIGYF2	RAB32	SLC2A5		HVCN1				RPS3A
NSMF	SCRIB	CYFIP1	RRBP1	GNAS	RAB4A	SLIRP		IGF2R				RPS4X
PHB2	SIPA1L1	DCTN5	SDCBP	GOLGA7	RAP2B	STOM		ITCH				RPS8
PI4KA	SLC16A1	DDRGK1	SEC61A1	HCK	SLC2A5	STX11		ITGAL				SF1
PPFIBP1	SLC29A1	DHCR24	SEC63	HVCN1	SNX18	STXBP2		LAMTOR1				SF3B2
PTPRD	SLC30A1	DHRS4	SRPR	IGF2R	STOM	STXBP3		LIN7A				SF3B4
RAB3GAP1	SSH1	DIAPH1	SSR1	ITCH	STX12	SURF4		LRRC57				SF3B6
RAB4A	STAU1	DNAJB11	STIM1	ITGAL	STXBP2	TCIRG1		LUZP1				SLIRP
RAP2B	STRN	DOCK2	SURF4	LAMTOR1	STXBP3	TMEM30A		LYN				SMNDC1
RPL10A	STRN4	EDEM1	TAP2	LAMTOR4	SURF4	TMEM63A		MYO5A				SND1
RPL18A	STX12	ERMP1	TBL2	M6PR	TAP2	TNK2		NCKAP1L				SNRPB
RPL4	STXBP2	FAF1	TECR	MAGT1	TCIRG1	VAMP8		NT5E				SNRPE
RPL9	STXBP3	FAM91A1	TMEM109	MEFV	TFRC	VAT1		PCYOX1				SRRM2
RPLP1	VTI1B	FDFT1	TMEM33	MFSD10	TMEM30A	VTA1		PI4KA				TARDBP
RPS15		FKBP15	TMEM50B	MGST1	TMEM63A			PLSCR1				XPO5
RPS29		GIGYF2	UFL1	MMP14	TNK2			PSMA1				
RPS3A		GNAS	VKORC1L1	MYD88	VAMP8			PSMA5				
RPS4X		GOLGA7	VMA21	MYO5A	VAT1			PSMC6				
RPS8		HCK	VTI1B	NCALD	VTI1B			PTBP1				
RRAS		HVCN1		NCKAP1L				PTPRD				
SCIN		IGF2R		NECAP1				RAB3GAP1				
SCRIB		IKBIP		PI4KA				RAB4A				
SDCBP		ING2		PML				RAP2B				
SIPA1L1		ITCH		PSMA5				RBMX				
SLC16A1		ITGAL		PSMD1				RPL10A				
SLC29A1		KIAA0196		RAB11FIP1				RPL28				
SLC30A1		KTN1		RAB32				RPL4				
SSH1		LAMTOR1		RAB4A				RPS29				
STAU1		LAMTOR4		RABGEF1				RPS3A				
STRN		LRRC8C		RAP2B				RPS4X				
STRN4		LYN		RGS19				RPS8				
STX11		M6PR		SAMD9L				RRAS				
STX12		MAGT1		SDCBP				SCIN				
STXBP2		MFSD10		SLC2A5				SCRIB				
STXBP3		MGST1		SLIRP				SLC16A1				
TJP2		MGST3		SND1				SLC2A5				
TNK2		MMP14		SNX18				SMC2				
VTI1B		MOB4		STOM				SND1				
		MYD88		STX11				SNX18				
		MYO5A		STX12				SRPR				
		NCALD		STXBP2				SRSF7				
		NCKAP1L		STXBP3				STAU1				
		NECAP1		SURF4				STOM				
		NOMO2		SYK				STXBP2				
		NSMF		TAP2				STXBP3				
		NUP62		TCIRG1				TFRC				
		NUP98		TFRC				TGFBI				
		PARP1		TMEM30A				TMEM109				
		PCYT1A		TMEM33				TMEM63A				
		PIGK		TMEM63A				TOLLIP				
		PLP2		TNK2				VAMP8				
		PLSCR1		TOLLIP				VAT1				
		PML		TPCN1				VTA1				
		POR		VAMP8				VPS13D				
		PREB		VAT1								
		PSMA5		VIPAS39								
		PSMD1		VMA21								
		PTDSS1		VTA1								
		PWP1		VTI1B								
		RAB11FIP1		WDFY1								
		RAB32		WDR11								
		RAB3GAP1										
		RAB4A										
		RABGEF1										
		RAE1										
		RANGAP1										
		RAP2B										
		RGS19										
		RPL10										
		RPL4										
		RPS29										
		RPS3A										
		RPS8										
		RRBP1										
		SAMD9L										
		SDCBP										
		SEC61A1										
		SEC63										
		SLC2A5										
		SLC30A1										
		SLIRP										
		SNX18										
		SRPR										
		SSR1										
		STAU1										
		STIM1										
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		STRN3										
		STX11										
		STX12										
		STXBP2										
		STXBP3										
		SURF4										
		TAP2										
		TBL2										
		TCIRG1										
		TECR										
		TFRC										
		TGFBI										
		TMEM109										
		TMEM167A										
		TMEM30A										
		TMEM33										
		TMEM50B										
		TMEM63A										
		TNK2										
		TOLLIP										
		TP63										
		TPCN1										
		TRIM22										
		TRRAP										
		UFL1										
		VAMP8										
		VAT1										
		VIPAS39										
		VKORC1L1										
		VMA21										
		VTA1										
		VTI1B										
		WDFY1										
		WDR11										
		XPO7										
67	**45**	**150**	**48**	**92**	**43**	**43**	**23**	**83**	**16**	**14**	**18**	**44**

Supplemental Table S2. Classification of GFP-SARS-CoV-2 E protein interactors according to GoTERM category of cellular compartments. Proteins classified into the distinct cellular region or cell compartment are listed; the total number of proteins is indicated at the bottom. Color assigned to the different categories is according to Figure 3B.
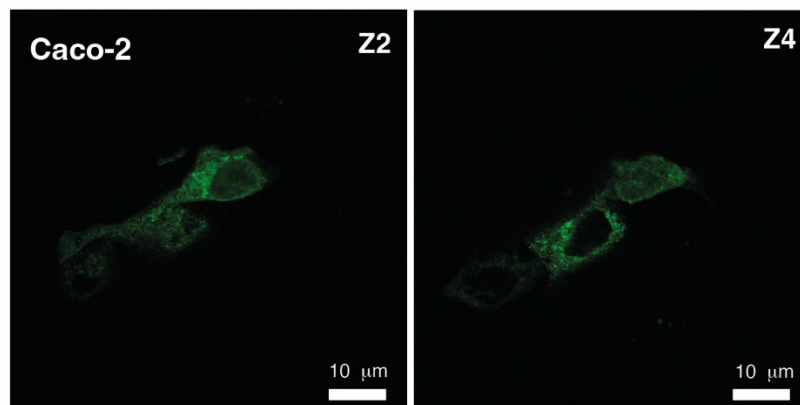
Supplemental Figure S1. Expression of the recombinant GFP SARS-CoV-2 E protein in Caco-2 cells. (A) Cells were transfected with either the plasmid pEZYeGFP (empty vector; line 1) or with the pEZYeGFP-SARS-CoV-2 E construct (line 2). After 24 h, cells were lysed and analyzed by Western Blot using anti-GFP and anti-tubulin Abs. (B) Caco-2 cells were seeded into coverslips, transfected with the pEZYeGFP-SARS-CoV-2 E construct and next day fixed and analyzed by confocal microscopy. Two different confocal planes (Z) of a representative transfection are shown.

A
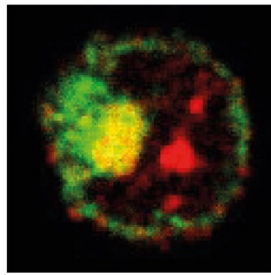
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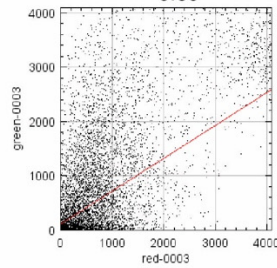
Li´s intensity correlation (-0.5 to 0.5)
0.28
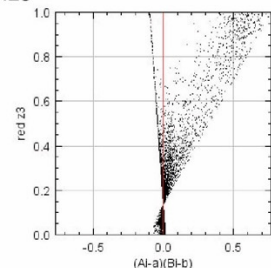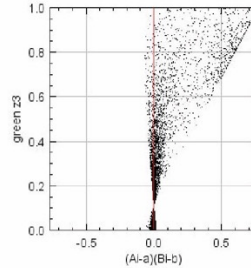
M1 coefficient: fraction of channel A (GFP-E)
overlaping to channel B (syntenin): 0.609

M2 coefficient: fraction of channel B (syntenin)
overlaping to channel A (GFP-E): 0.470

B
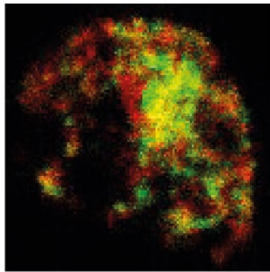
Pearson´s coefficient (-1 to 1)
0.703
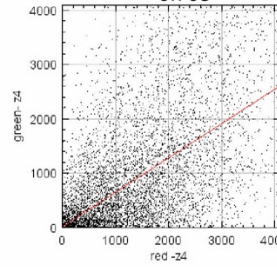
Li´s intensity correlation (-0.5 to 0.5)
0.34
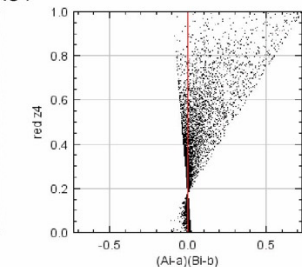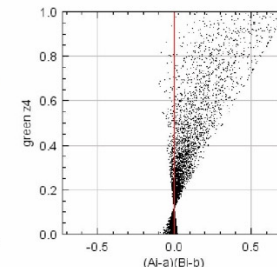
M1 coefficient: fraction of channel A (GFP-E)
overlaping to channel B (ZO-2): 0.442

M2 coefficient: fraction of channel B (ZO-2)
overlaping to channel A (GFP-E): 0.796

C
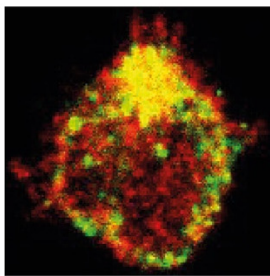
Pearson´s coefficient (-1 to 1)
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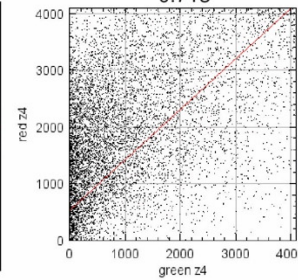
Li´s intensity correlation (-0.5 to 0.5)
0.32
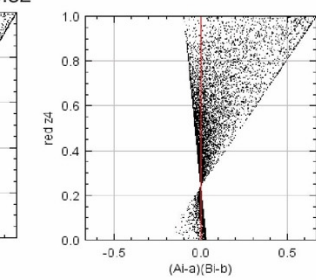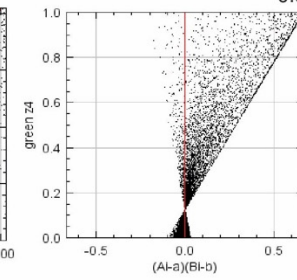
M1 coefficient: fraction of channel A (GFP-E)
overlaping to channel B (IL-16): 0.650

M2 coefficient: fraction of channel B (IL-16)
overlaping to channel A (GFP-E): 0.596

Supplemental Figure S2. GFP-SARS-CoV-2 E protein co-localization with PDZ proteins in THP-1 monocytes. Representative analysis of the co-localization of the GFP-SARS-CoV-2 E protein with the PDZ proteins (A) syntenin, (B) ZO-2 and (C) IL-16. The images shown were analyzed with the JaCoP plugin. Mander´s coefficient was used to determine the concurrence of both proteins, while Pearson´s coefficient and Li´s intensity correlation were used for analysis of fluorescence intensity correlation.

Mander´s coefficient (ranging from 0 to 1) was determined using automatic threshold. M1 corresponds to the fraction of channel A (green; GFP-E) that overlaps with channel B (red; PDZ protein), while M2 corresponds to the fraction of channel B (red; PDZ protein) overlapping with channel A (green; GFP-E). M values are indicated below for each image.

Pearson´s coefficient (ranging from -1 to 1) and Li´s intensity correlation (ranging from -0.5 to 0.5), were also used. In all the cases the analysis showed partial co-localization since concurrence was restricted to certain cell regions.