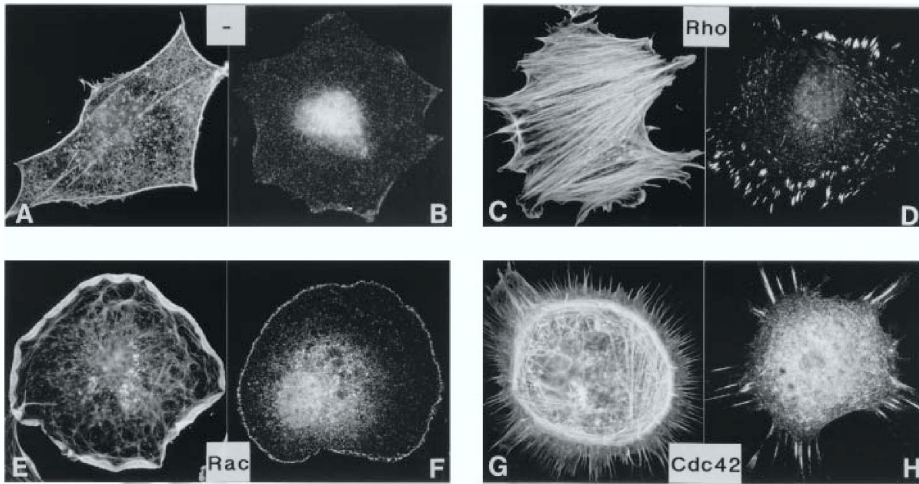


Rho GTPases and actin rearrangements



Staining:

A, C, E, G – actin;
B, D, F, H – vinculin.

Stimulation:

A, B – control,
C, D – LPA,
E, F – PDGF,
G, H – bradykinin.

Potential effector proteins for Rho, Rac and Cdc42.

Potential effector protein	Type of protein	Functions	Selectivity of Rho GTPase binding		
ROK α , ROK β	Ser/Thr kinase	Actin/myosin	Rho		
PKN/ PRK1, PRK2	Ser/Thr kinase	Unknown	Rho		
Citron kinase (citron)	Ser/Thr kinase	Cytokinesis	Rho		
Mik2, 3	Ser/Thr kinase	JNK		Rac	Cdc42
MEKK1, 4	Ser/Thr kinase	JNK		Rac	Cdc42
PAK1, 2, 3	Ser/Thr kinase	JNK/actin		Rac	Cdc42
PAK4	Ser/Thr kinase	Actin			Cdc42
MRCK α , MRCK β	Ser/Thr kinase	Actin			Cdc42
Ack1, 2	Tyr kinase	Unknown			Cdc42
MBS	Phosphatase subunit	MLC inactivation	Rho		
PI-4-P5K	Lipid kinase	PIP ₂ levels/actin	Rho ^{**}	Rac [*]	
PI3K	Lipid kinase	PIP ₃ levels		Rac	Cdc42
PLD	Lipase	PA levels	Rho	Rac	Cdc42
Rhopilin	Scaffold	Unknown	Rho		
Rhotekin	Scaffold	Unknown	Rho		
Kinectin	Scaffold	Kinesin binding	Rho		
Dia1, Dia2	Scaffold	Actin organization	Rho		
WASP, N-WASP	Scaffold	Actin organization			Cdc42
WAVE/ Scar	Scaffold	Actin organization		Rac ⁺	
POSH	Scaffold	Unknown		Rac	
POR-1	Scaffold	Actin organization		Rac	
p140Sra-1	Scaffold	Actin organization		Rac	
p67 ^{phox}	Scaffold	NADPH oxidase		Rac	
IQGAP1,2	Scaffold	Actin/cell-cell contacts		Rac	Cdc42

Proteins shown with an asterisk (*) are those which appear to be activated by GTPases in a GTP-dependent manner, but where the interaction is GTP-independent. Proteins shown with a superscript plus sign (+) are those for which a functional relationship with GTPase, but not a direct interaction, has so far been shown

