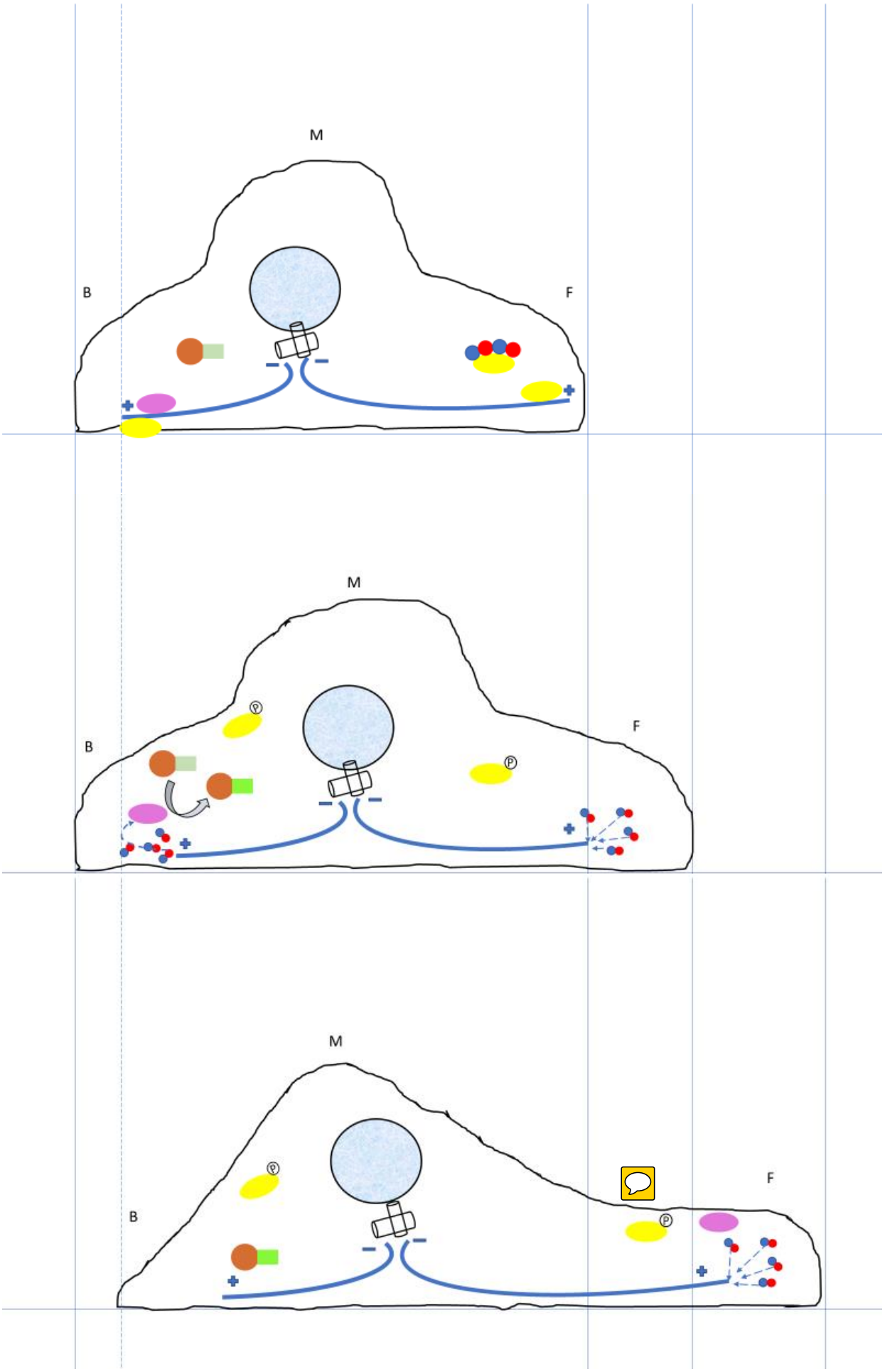
The effect of stathmin and GEF-H1 in migrating fibroblast



Symbol	Description
	Nucleus
	Rho-GDP
	Rho-GTP
	Stathmin (phosphorylated (P) and unphosphorylated)
	α- and β-tubulin
	Centrosome
	GEF-H1
	Microtubules

Description

Stathmin is phosphorylated by the kinase Pak1 that is activated by Rac1. This leads to the liberation of α- and β-tubulin bound by the unphosphorylated stathmin. These α- and β-tubulin-dimers then polymerize at the + end of the microtubule. Additionally, microtubule ends (both plus and minus) are no longer stabilized by unphosphorylated stathmin and therefore depolymerize. This liberates α- and β-tubulin-dimers and bound GEF-H1, which is thereby activated. Active GEF-H1 catalyses the conversion of inactive Rho-GDP to the active Rho-GTP resulting in microtubule stabilization and actomyosin contraction.