

Supplementary Table 2. Number of signaling molecules

Protein	Number of molecules per cell	Variability according to sensitivity analysis	References
Receptors	5.00×10^4	$3-8 \times 10^4$	Berkers, 1991
GAP	1.20×10^4	$6-15 \times 10^3$	Estimation
Shc	1.01×10^6	$5-15 \times 10^5$	Estimation
Grb2	5.10×10^4	$3-11 \times 10^4$	Kholodenko, 1999
Sos	6.63×10^4	$4-10 \times 10^4$	Estimation
Ras-GDP total	1.14×10^7	–	Biochem. Quantif.
Raf Kinase	4.00×10^4	$4.0-20 \times 10^4$	Estimation
MEK total	2.20×10^7	$1.9-2.3 \times 10^7$	Biochem. Quantif.
ERK total	2.10×10^7	–	Biochem. Quantif.
Phosphatase 1	4.00×10^4	$3.5-4.5 \times 10^4$	Estimation
Phosphatase 2	4.00×10^4	$3.5-4.5 \times 10^4$	Estimation
Phosphatase 3	1.00×10^7	–	Estimation
Coated-pit protein	8.10×10^4	$2.1-9.1 \times 10^4$	Starbuck, 1992

Berkers, J.A. van Bergen en Henegouwen, P.M. & Boonstra J. Three classes of epidermal growth factor receptors on HeLa cells. *J. Biol. Chem.* **266**, 922-927 (1991).

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Starbuck, C. & Lauffenburger, D.A. Mathematical model for the effects of epidermal growth factor receptor trafficking dynamics on fibroblast responses. *Biotechn. Prog.* **8**, 132-143 (1992).