

Macroscopic forces generated by cell-matrix interactions

I. Cells generate forces after becoming attached to a matrix.

II. How do cells attach to a matrix?

III. Cell-matrix interactions control the spontaneous closure of wounds in organs.

IV. What happens when wound closure occurs by induced regeneration?

Integrin Superfamily

| INTEGRINS | LIGANDS |
|----------------------------|---|
| β1 Family | |
| α1β1 | Fibrillar collagen, laminin |
| α2β1 | Fibrillar collagen, laminin |
| α3β1 | Fibronectin (RGD), laminin-5, entactin, denatured collagens |
| α4β1 | Fibronectin (LEDV), VCAM-1 |
| α5β1 | Fibronectin (RGD) |
| α6β1 | Laminin |
| α7β1 | Laminin |
| α8β1 | Fibronectin, vitronectin |
| α9β1 | Tenascin |
| αv Family | |
| αvβ1 | Fibronectin (RGD), vitronectin |
| αvβ3 | Vitronectin (RGD), fibronectin, fibrinogen, von Willebrand factor, thrombospondin, denatured collagen |
| αvβ5 | Fibronectin (RGD), vitronectin |
| αvβ6 | Fibronectin, tenascin |
| Other ECM Integrins | |
| αIIbβ3 | Same as αvβ3 |
| α6β4 | Laminin |
| β2 Family | |
| α _M β2 | ICAM-1, iC3b, fibrinogen, factor X |
| α _L β2 | ICAM-1, 2, and 3 |
| α _X β2 | iC3b, fibrinogen |

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See Figures 3 through 11 in Sethi K.K., I.V. Yannas, V. Muderu, M. Eastwood, C. McFarland, and R.A. Brown. "Evidence for sequential utilization of fibronectin, vitronectin, and collagen during fibroblast-mediated collagen contraction." *Wound Repair Regen.* 2002 Nov-Dec;10(6):397-408.

Available in full-text version at PubMed (<http://www.pubmed.org>).