Inhibition of mesoderm formation by follistatin

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Mesoderm induction requires interaction between cells of the animal and vegetal hemispheres of the embryo. Several molecules have been proposed as candidates for mesoderm-inducing signals, with activin a particularly strong candidate. However, it has not been possible to inhibit mesoderm formation in vivo by specifically blocking activin action. Follistatin is able to inhibit the action of activin but not that of the mature region of Vg1, a member of the transforming growth factor ? family. Follistatin therefore provides a useful tool for distinguishing between signalling by these two factors. We have overexpressed Xenopus follistatin mRNA and analysed the expression of several mesodermal markers. Our results show an inhibition of mesodermal formation by follistatin in a concentration-dependent manner, showing the requirement of activin for mesodermal induction.