Jelly coat, cell shape and cleavage plane reorientation in *Xenopus* early embryos

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Abstract
Cell shape has been shown to influence cleavage plane orientation in early *Xenopus laevis* embryos [1]. A similar effect has been reported as resulting from a strong static magnetic field [2], while other studies did not find any significant magnetic field effect on development at all [3,4]. Here, we present evidence that the jelly coat – which surrounds the fertilizable eggs like an external skeleton and which is often neglected as an experimental parameter – might offer an explanation for these seemingly differing findings. As the mediator between jelly coat and cleavage plane determination, we propose cell shape. This hypothesis is supported by ³¹P solid state NMR spectra which show that the fluidity of the oocyte's cell membrane is higher in the absence than in the presence of the jelly coat.