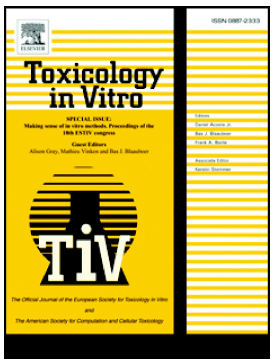

Fetal bovine serum induces sustained, but reversible, epithelial-mesenchymal transition in the BEAS-2B cell line

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Abstract

BEAS-2B is a non-malignant, immortalized human cell line that has been used extensively as a model of lung epithelium. Despite ATCC recommendations to culture BEAS-2B in defined, serum-free media, many publications describe culturing BEAS-2B in fetal bovine serum (FBS)-containing media. The objective of this study was to define the effects of FBS on BEAS-2B cells. FBS exposure resulted in increased nuclear levels of transcription factors responsible for regulating epithelial-mesenchymal transition (EMT), increased cell invasiveness and increased anchorage-independent growth. FBS-exposed BEAS-2B cells exhibited a decrease of the epithelial markers, E-cadherin and claudin-1 at the mRNA and protein levels, along with a corresponding increase of the mesenchymal marker, vimentin, at the protein level. Fractionation studies implicated an active moiety in FBS with a molecular weight larger than 30 kD. The mesenchymal phenotype was persistent provided FBS exposure was maintained. Upon FBS removal, both epithelial and mesenchymal markers began to revert toward an epithelial