A standard alloy as reference for future tests of biomaterials

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A wide range of Mo-containing alloys are clinically used, e.g. as artificial hip replacement and dental brackets. We used a published Co-Ti-Mo alloy to investigate the effects of growth-medium extracts of the individual components on human microvascular dermal endothelial cells from adult donors (HMVEC). MTT assays indicated a stimulatory effect of higher dilutions of Mo-extracts while higher dilutions appeared to negatively influence the metabolic activity of HMVEC. Furthermore, HMVEC could not be grown on either individual component of the alloy whereas cells attach to and grow on the alloy itself. These straightforward assays established that this published alloy is not cytotoxic to HMVEC. Soluble Mo-components may prompt cells to grow on this alloy. We suggest using this alloy as an internal reference in future determinations of alloy cytotoxicity to allow for a comparability between experimental results. Nevertheless, further effort is needed to shed light onto the underlying cell biology of the interface between alloy and cells.