Optimizing a protocol for isolating extracellular vesicles from medium conditioned by bovine embryos in vitro

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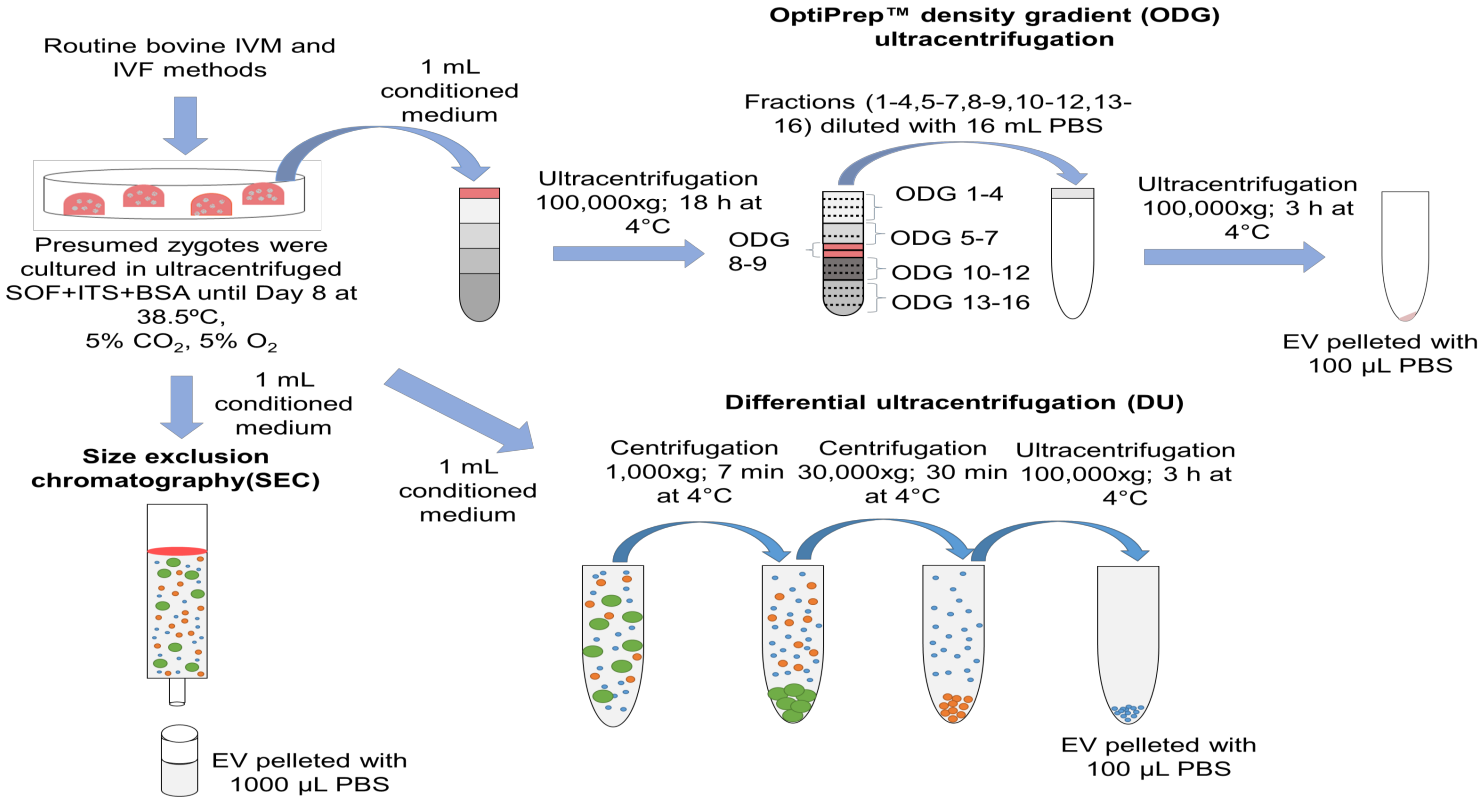
Study question

So far, different isolation procedures have been used for extracting extracellular vesicles (EVs) from body fluids or conditioned medium. But there is no standard isolation method for isolating EVs from limited volumes of medium conditioned by bovine embryos.

Summary answer

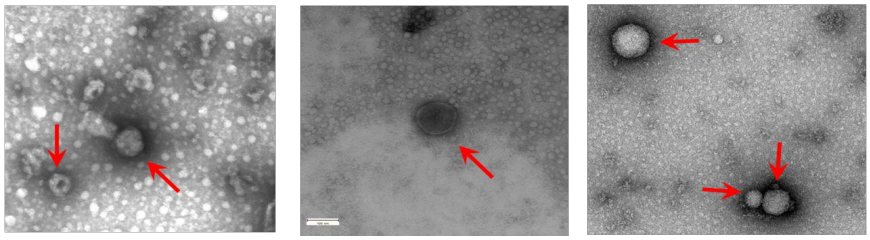
We used three different methods (Optiprep™density gradient (ODG), Differential ultracentrifugation(DU), Size exclusion chromatography (SEC)) for isolating EVs from bovine embryo conditioned medium. Based on our data, we propose to use the SEC method which is quick and efficient. Moreover, only a limited volume is sufficient for isolating EVs.

Experimental Design



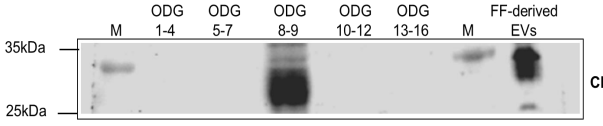
Electron microscopy

EVs derived by DU | EVs derived by SEC | EVs derived by ODG

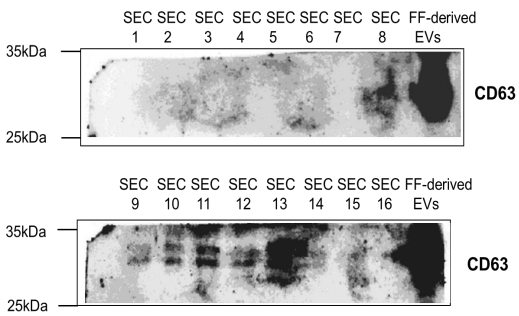


Western Blot

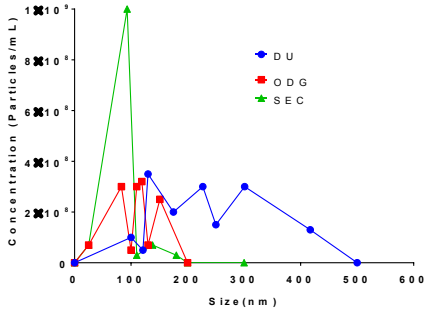
OptiPrep™ density gradient (ODG) fractions



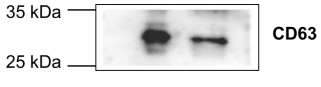
Size exclusion chromatography (SEC) fractions



Nanoparticle Analysis



Differential ultracentrifugation (DU)



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