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Supervisor's report for the Bachelor's Thesis of Joan Elorn Abla Ahiable entitled:

Cloning Candidate Novel Cell-Fate Genes (Preimplantation Mouse Embryo)

Joan conducted a Bachelor's level research project in my laboratory between January and June 2011. She had the distinct privilege, or otherwise, to be the first research student of any level to pass through my newly created independent laboratory. I consider this a not too trivial point as at the time the lab was still in process of becoming fully operational and as is common place in similar circumstances was not immune from the odd 'teething problem'. In fact, it is noteworthy that Joan's contribution to helping me establish the laboratory was incredibly useful and I thank her for her efforts in that regard.

My main research interest lies with furthering our understanding of how the very first cell-fate decisions of mammalian development are made in the pre-implantation embryo utilising the mouse model. Prior to Joan's arrival in the lab, I had been employed in interrogating various gene expression data (described by Joan in her defence presentation) to identify potentially novel candidate cell-fate genes that could influence cell-lineage segregation in the pre-implantation mouse embryo. Joan's arrival in my group, coincided with the point at which I wanted to generate useful molecular biology based tools and constructs to follow up the potential roles of the most promising of these identified candidates. Accordingly, I set her the task to clone the cDNAs of 7 genes, incorporating N-terminal epitope tags, into a plasmid vector that would then permit the derivation of mRNA by *in vitro* transcription. It was planned that these could then be used to effect over-expression within defined cell clones of the embryo after microinjection. A parallel aim was to derive long double stranded mRNA's specific for our candidate genes to effect gene expression knockdown also after microinjection. As the lab was still in its infancy, a third aim was for Joan to generate mRNAs for fluorescent proteins that could serve as general embryo microinjection controls in the future.

Joan was able to successfully clone three sequence verified and N-terminally tagged genes from the original seven candidates and to also generate *in vitro* transcribed mRNA for embryo microinjection. She also generated long double stranded mRNAs for three genes and mRNAs for four fluorescent microinjection control proteins. These constructs have been or are in current use by *Ph.D.* students in my laboratory. In terms of her achieving an acceptable resolution to the aims of her project I can say that I am well satisfied with Joan's bench-based work. I found that she was a very cheerful, diligent and careful worker. It was a pleasure to have in her the lab. One mild but nevertheless important criticism that I would make is that she could have