Monoclonal Antibody Development with Hudson's *ProLink Express*™

The objective of using the ***ProLink*** for monoclonal antibody development -is to use ***ProLink*** 's remarkable capacity to perform multiple processes simultaneously in order to rapidly, and accurately, identify and isolate hybridomas producing desired monoclonal antibodies.

The ***ProLink*** process would start by dispensing the entire volume of newly created, mixed hybridomas, formed from the initial source of polyclonal B-cells, into multiple 96-well plates. The ***ProLink***'s micro10 dispenser, drawing upon the flask of hybridoma cells, would perform this task. Then the ***ProLink*** will process these cells through a series of repetitive steps automatically, keeping track in its database of every sample in every well throughout the process.

The ***ProLink*** relieves technicians of the burden of what now becomes a mind-numbing statistical process of repeated dilutions and analyses of the multiplexed hybridoma population to eventually get them down to a single type in a microplate well through dilution cloning.

The typical ***ProLink*** process proceeds as follows:

1. Distribute the initial mixed hybridomas to ten or more 96 well tissue culture plates.
2. Incubate to grow healthy cells.
3. Centrifuge to pellet the cells and grow in select medium to kill cells that produce other antibodies or produce no antibodies.
4. Centrifuge plates to pellet the cells surviving the select medium and extract the supernatant.
5. Transfer the supernatant to ELISA plates and find those wells that show the presence of the sought-after antibody.
6. Resuspend the pelleted cells in only those wells that have this antibody.
7. Re-distribute each of these wells' contents to new larger tissue culture vessels for dilution and again distribute these cells to microplate wells for pipetting and analysis.
8. Repeat the above process to approximate an ultimate dilution of $1{:}10^{12}$ from the original source to get down to the single cell level per well.

Eventually, the preserved wells have only one hybridoma each that produces the antibody being sought. These hybridoma cells can now be saved and grown out *in vitro* to produce supernatant containing the antibody for harvesting endlessly.

This process requires many hundreds of plates for the dilutions and outgrowths and for the ELISAs to detect the desired antibodies. The steps require delivery of many plates, automated incubator(s), media dispenser, centrifuge, pipettor, gas-permeable seal applicator, plate reader, barcode scanner, tracking software and means for moving plates among the instruments for the different steps. This entire collection of instruments and capabilities are part of the ***ProLink*** system.

The advantages of ***ProLink*** include the certainty and orderliness of the process execution, the ability to continue processing overnight, ***ProLink***'s accurate data tracking, and ***ProLink***'s ability to have *multiple runs* in varying stages of completion *simultaneously*. As each incubation cycle can take 20 – 24 hours, if the ***ProLink*** is equipped with multiple incubators, the last feature, multitasking several batches, can mean high productivity and output levels far greater than with any available alternative.

Developing monoclonal antibody cell lines will be faster and more certain than researchers have ever thought possible, all through the remarkable properties of Hudson's ***ProLink Express***™ robotic proteomics system.

by

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