Researchers show how to divide and conquer 'social network' of cells

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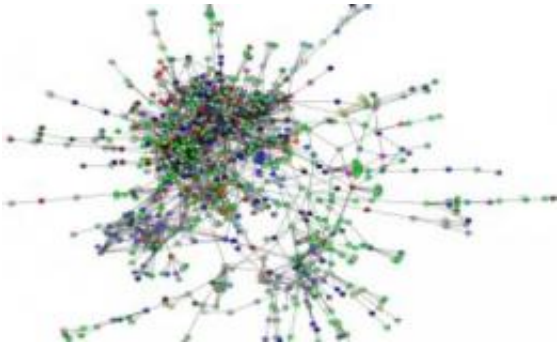

Université de Montréal scientists Stephen Michnick and Po Hien Ear have managed the feat of dividing cell networks down to their genesis. Credit: Stephen Michnick; Po Hien Ear, Université de Montréal

On Noah's Ark animals came in twos: male and female. In human bodies trillions of cells are coupled, too, and so are the molecules from which they are composed. Yet these don't come in twos, they are regrouped into indistinguishable clusters. Because these complex cell networks are the backbone of life - and illness - scientists have long searched for ways to splice cell clusters down to their original pairs.

According to a new study in the journal Nature Methods, Université de Montréal scientists Stephen Michnick and Po Hien Ear have managed the feat of dividing cell networks down to their genesis. The discovery could have applications for diseases such as cancer, where blood-thirsty cells could be decoupled to curb their multiplication in the human body.

"We have provided a simple way to decouple one cellular network from another," says Dr. Michnick, a Université de Montréal biochemistry professor and Canada Research Chair in Integrative Genomics. "Once decoupled, we could clearly distinguish what one network was doing versus another."

As part of their study, the researchers reproduced gene networks using baker's yeast - a cellular organism proven to resemble the critical functions of human cells. "We cut out relationships between cells to see which are crucial and which are not," explains Dr. Michnick. "We found that de-coupling cells permitted growth regulation. One way to attack cancer would be to find molecules that decouple other networks (as we did), slow down its growth and weaken the illness."

More information: The article, "A general life-death selection strategy for dissecting protein functions," published in Nature Methods, was coauthored by Po Hien Ear and Stephen W. Michnick of the Université de Montréal. www.nature.com/nmeth/journal/v … full/nmeth.1389.html

Source: University of Montreal (news : web)