Medical Xpress

Controversial TOFT theory of cancer versus SMT model: Authors do battle in BioEssays

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Writing in *BioEssays*, cancer scientists Ana Soto and Carlos Sonnenschein pit their controversial Tissue Organization Field Theory (TOFT) of the origin of cancer against the widely accepted Somatic Mutation Theory (SMT) in what is believed to be the first time the two theories have formally opposed each other – championed by authors from opposite sides of the debate – in a common forum for discussion.

Soto and Sonnenschein, from Tufts University, argue that SMT, which is based on the accumulation of genetic mutations in cells, not only fails to provide an explanation for observable phenomena in cancer biology, but with current technologies it is essentially untestable.

The TOFT theory proposes that cancer is a clonal, cell-based disease, and implicitly assumes that quiescence is the default state of cells in multicellular organisms.

"SMT is strongly supported by observations of leukemias that bear specific chromosome translocations," writes Dr David Vaux, from La Trobe Institute for Molecular Science, Australia, in defence of SMT. "Perhaps the strongest validation comes from the successful treatment of certain malignancies with drugs that directly target the product of the mutant gene."

"This appears to be the first time that the TOFT has formally gone head-to-head with the SMT in a common arena" said *BioEssays*, Editor-in-Chief Andrew Moore.

"*BioEssays* believes that science advances through the clear exposition of contrary views, and has created a new forum for vigorous debate which addresses the fundamental basis of cancer: may our readers decide for themselves!" adds David Thomas, *BioEssays*, Editorial Board Member, and co-editor of the PointCounterpoint pair.

More information: The abstracts are available free online here:
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