



Opinion

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Interpretations Outcomes of Assays Fulfilling on Knockdown Cells and in Vivo

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Abstract

The interpretation the experimental assays on „Knockdown cells“ should be limited considering interactions between each cell and an organism if the experimental assays would be carried out „in vivo“.

Interdependence Knockdown Cells and in vivo

Just obligatory interactions between extracellular medium and intracellular medium are determined by interactions between intracellular balance anabolic processes & catabolic processes and extracellular balance anabolic processes & catabolic processes which induce fluctuating balance inner chemical potential cells ($\mu_{\text{inner cell}}$) & outer chemical potential cells ($\mu_{\text{outer cell}}$). The fluctuating balance inner chemical potential cells ($\mu_{\text{inner cell}}$) & outer chemical potential cells ($\mu_{\text{outer cell}}$) exerts interaction between intracellular medium and extracellular medium which is the driving mechanism as of cellular development as well as of activity cellular cycle in norm and in pathology [1-4]. Besides extracellular medium of each cell is the Internal Medium of an organism containing respiratory electron transport chain with its NADH-Q oxidoreductase of Complex → Succinate-Q oxidoreductase via flavin adenine dinucleotide (FAD) coenzyme of Complex II → Q-cytochrome c oxidoreductase of Complex III → Cytochrome c oxydase of Complex IV → ATP synthase for oxidative phosphorylation of Complex V as well as Reactive Oxygen Species (ROS), superoxide ($\text{O}_2^{\cdot -}$), Free Radicals operations and so on, i.e. oxidative processes from lung respiratory processes through oxyhemoglobin in erythrocytes and further respiratory electron transport chain into extracellular medium forming balance anabolic processes & catabolic processes which cause outer chemical potential cells ($\mu_{\text{outer cell}}$) [5-8]. Thus revealing some Factors can be as Products of some biochemical Reactions as well as Reagents of these Reactions although Reactant of chemical reaction can be transited into Product of this reaction and vice versa which depends on changes balance inner chemical potential cells ($\mu_{\text{inner cell}}$) &

outer chemical potential cells ($\mu_{\text{outer cell}}$) according Henderson - Haselbach formula, for example, for reaction $A + B = C + D$. (A and B are Reactants; C and D are Products; K is Constant of Reaction):

$$K = \frac{[C] \times [D]}{[A] \times [B]}$$

Therefore the experimental assays on „Knockdown cells“ give possibility to reveal different Factors, Kinases and the other cellular elements and to determine empirical their cellular or local influences on cellular activity. However experimental assays on „Knockdown cells“ don't give possibility to explain mechanisms of these Factors action in cellular cycle and mechanisms influences on an organism's metabolism and its development. Just study interactions intracellular medium with internal medium of an organism as extracellular medium explain mechanisms of these Factors action in cellular cycle and mechanisms influences on an organism's metabolism and its development [9-14]. This interactions between intracellular medium and internal medium of an organism as extracellular medium can be determined either through consideration these interactions from the point of views of thermodynamics [its laws], biophysics and biochemistry or via supplemental experiments in vivo.

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Conflict of Interest

No conflict of interest.

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