



Dr. Thomas Wilckens

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Executive summary, Dr. Thomas Wilckens:

In 1987, still in medical school, Dr. Wilckens identified discrepancies between evidence published by the pioneers of cortisol research Hench et al., and observations obtained with synthetic compounds like dexamethasone. This led him to in depth evaluate contemporary publications and the literature dating back to 1936 in order to identify the sources of these discrepancies. In summary, the dogma that corticosteroids as a key mediator of stress reactions are generally immunosuppressive and anti-inflammatory is based on the interpolation of data obtained with a synthetic compound to the natural hormone. This generalisation is, however, not logic and obsolete since it disregards essential pathways and factors that control cortisol's biological functions; *Immunology Today* (1997); *Trends in Pharmacological sciences* (1995). Today, the *human physiology-first approach* to data interpretation is termed Translational Research and Dr. Wilckens' views on cortisol's physiological functions is finding broad support although the impact of his conclusions is just being recognized in as much as this data interpretation allows the anticipation of innovative therapeutic concepts and novel targets. In brief, endogenous cortisol orchestrates and optimizes homeostasis and in this function also host defence, inflammation and immunity. In line with this short term stress actually optimizes immune reactions including pro-inflammatory gene-induction, while chronic stress results in disturbances of basically every physiological function affected by cortisol and this way contributes to several pathologies. Activation of the mineralocorticoid receptor by cortisol in cardiovascular disease, the induction of acute phase proteins as well as some cytokines, are examples, how endogenous cortisol induces proinflammatory genes as part of early defence and repair functions. The revised analysis of cortisol's impact on inflammation/immunity is in line with the views of Hans Selye in 1936 from a teleological viewpoint how homeostasis is defended and how an organism is able to adapt to "stress".

Based on his observations and analysis Dr. Wilckens founded a company to further exploit his insight in particular with respect to intracellular hormone metabolism. The concept was to create a PoC by the use of existing resources and further establish a novel drug target class, which eventually became a major target in metabolic diseases and which was recently also linked to the control of inflammation/angiogenesis and bone physiology, i.e. 11-beta-hydroxysteroid dehydrogenases. During his 10 years hands on entrepreneurship he proactively initiated and lead drug discovery projects comprising cutting-edge methodologies in virtual competence networks, which lead to the delineation of "Symbiotic Innovation" as a new model for value creation in research intensive industries.

In summary, Dr. Wilckens conducted Translational Research even before the term was branded, from target identification to PoC studies right after finishing medical school. In his desire to bring a product to the market, he proactively engaged in projects that would create knowledge from human studies (for example in juvenile chronic arthritis, a disease that goes in remission for unknown reasons) that in turn would allow the delineation of new treatment paradigms. Furthermore, driven by his interest in science and technology and enforced by the small biotech environment of the company he started in 1999 he gathered a unique insight and knowledge about emerging discovery & development technologies, their capabilities and applications as well as their shortcomings. His passion to explore scientific literature in order identify "hidden links" that allow the development of novel therapeutics in immune-tolerance, inflammation, angiogenesis, bone physiology and metabolism, ideally complements and supports his entrepreneurial interests. Currently Dr. Wilckens is engaged in the identification and exploration of improved innovative business models to create value from basic science as well as the implementation of translational research as a novel research paradigm in the industry and academia, while he is also aiming to establish new drug discovery projects on the basis of "Symbiotic Innovation". Lately Dr. Wilckens introduced the concept of "Transcriptional Science", the rigorous selection and interpretation of "old" and currently generated data on the basis of the translational, "human-physiology first" paradigm. Transcriptional Sciences aims to secure reliability and validity of the data with respect to human physiology that establish the foundation for Translational Sciences and new drug discovery projects.