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Title: Novel approaches in clinical development of cannabinoid drugs

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Stellingen behorende bij het proefschrift:

**NOVEL APPROACHES IN CLINICAL DEVELOPMENT
OF CANNABINOID DRUGS**

- 1 Early drug studies that are essentially limited to assessment of tolerability and safety provide insufficient information for go/no-go decisions (*Adam Cohen*)
- 2 The development of drugs that act on complex systems (such as cannabinoids) requires a pharmacological approach, rather than a focus on safety and tolerability (*adapted from this thesis, chapter 7*)
- 3 Although the exact mechanism of cannabinoid induced changes in heart rate is unknown, this parameter is a suitable measure in the assessment of effect profiles of cannabinoid agonists and antagonists in addition to CNS parameters
- 4 The psychiatric adverse effects that led to the desertion of CB₁-antagonists can provide important clues to the pathogenesis of psychiatric disorders, which so far have been largely neglected
- 5 The abandonment of cannabinoid research by many pharmaceutical industries deprived this research field from an important driving force, which is essential to unfold the full therapeutic potential of this important pharmacological system
- 6 Renaming the cannabinoid system would benefit research and drug development in this field

- 7 RS-fMRI can possibly be a useful technique for prediction of drug effects (*this thesis, chapter 3*) despite the fact that this technique is (still) unable to link physiological or functional processes
- 8 One of the characteristics of successful drug development is the high termination rate in preclinical/phase I stages, which indicates that pharma companies have an early idea of which assets are likely to succeed (*adapted from M. Ringel, P. Tollman, G. Hersch, Boston Consulting Group*)
- 9 Researchers that can build bridges between business and science can improve the quality and efficiency of scientific research
- 10 The progressive and innovative nature of science contrasts with the conservative organization of academic institutions
- 11 The dismissal of a leading academic from a governmental drug advisory council*, because he expressed scientific arguments, highlights the danger of political involvement in scientific issues
- 12 “[...] music biologically and culturally co-evolved with dance to serve as a technology of social bonding” (*Walter Freeman, in The Origins of Music*); therefore, impoverishment of music education in the Netherlands will negatively influence the social fabric of Dutch society

* Prof. Dr. David Nutt, former chairman of the Advisory Council on the Misuse of Drugs in the UK