

# The antimanic-like effects of andrographolide and quercetin

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Belonging to the PhD dissertation

# THE ANTIMANIC-LIKE EFFECTS OF ANDROGRAPHOLIDE AND QUERCETIN

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Maastricht, March 22<sup>nd</sup>, 2021

1. The limited number of efficient and safe pharmacological options for the management of bipolar disorder makes the research for alternative drugs necessary. (*this thesis*)
2. As the pathophysiology of bipolar disorder involves increased activity of the enzymes GSK3 $\beta$  and PKC, as well as oxidative stress, research on GSK3 $\beta$  or PKC inhibitors with antioxidant properties can be considered a promising perspective in the search for pharmacotherapy of bipolar disorder (*this thesis*)
3. ANDRO, a GSK3 $\beta$  inhibitor with antioxidant properties, was shown to exert antimanic-like effects in rodent models of mania (sleep deprivation and psychostimulant administration), while inhibiting brain GSK3 $\beta$  activity and reducing brain oxidative stress parameters (*this thesis*)
4. Quercetin, a PKC inhibitor with antioxidant properties, was shown to exert antimanic-like effects in mice models of mania (sleep deprivation and methylphenidate administration), while reducing brain oxidative stress parameters (*this thesis*)
5. Because the safety of both ANDRO and quercetin have been attested and because these compounds are already consumed by the general population in food and supplements, there is very likely a future perspective for these drugs when their efficacy is validated in the ongoing clinical trials for various diseases. (*this thesis*)
6. "Maybe the human brain is an object beyond the reach of metaphor, for the simple reason that it is the only object capable of creating metaphors to describe itself. The human brain creates the human mind, and then the human mind tries to underhand the human brain, however long it takes and whatever the cost." (*Luke Dittrich*)
7. "Science has not yet taught us if madness is or is not the sublimity of the intelligence". (*Edgar Allan Poe*)

8. "Who is more humble? The scientist who looks at the universe with an open mind and accepts whatever it has to teach us, or somebody who says everything in this book must be considered the literal truth and never mind the fallibility of all the human beings involved?" (*Carl Sagan*)
9. Ups and downs are part of life. But sometimes life can become too hectic and surviving this rollercoaster is tough. In these moments, running away is mostly not the best solution, but facing it with courage, seeking support and believing in yourself is a step towards stability. Life and therefore also bipolar disorder is all about finding balance.
10. Once we are introduced to life, we must establish our objectives and then with our talents we can obtain results, thus hopefully making a difference. We should analyze and discuss every part of this process so we can actually draw the best conclusions! However, we should also never forget to acknowledge and reference everyone who helped us achieving our objectives.