Mental disorders account for over a quarter of all years lived with disability in the world. New therapeutic discoveries to treat mental disorders are at a standstill despite advances in neuroscience. Traditional reductionist approaches to identify a single receptor/molecule or more recent approaches identifying neural circuitries as therapeutic targets often take for granted the translational potential of such studies and not question whether those targets exist or function similarly in humans. In addition, epidemiological, behavioural, and sex-specific characteristics of disease ontogeny and progress are commonly overlooked in popular neuroscientific models, further reducing any practical implications and outcomes of neuroscientific research. Behavioural neuroscience with clear incorporation of back-translation and factors related to human disease offers a bridge between bench science to clinical science. I will present the latest translational neuroscience work spanning transcriptomics and animal behaviours that has led to a successful multi-million dollar funding of an international clinical trial to test trimetazidine to treat the depressive phase of bipolar disorder (https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?id=383758&isReview=true ). Selecting the right behavioural neuroscience tools that are ethologically valid will lead to a more efficient and positive translational pipeline to better human lives.

Keywords: Translation, clinical trial, behaviour, rat, psychiatry, biomarker