**Manuscript Number: NPP-15-0074**

*Title:* Reward processing in unipolar and bipolar depression: A functional MRI study

*Neuropsychopharmacology*

*Background:* the current study uses functional MRI and connectivity measures to investigate the neural correlates of reward processing in unipolar, bipolar and healthy controls. The authors report that during the performance of a card-guessing paradigm HC displayed increased activity compared to BD/UD in the NAcc. At a connectivity level the UD group showed increased functional connectivity btw NAcc and VTA than HC. BD showed reduced activation in regions of the basal ganglia, insula and frontal regions. These findings may suggest that the tendency to seek for rewarding activities and stimuli observed in manic patients may have led to the downregulation of the mesolimbic system, and as a result, a blunted response to rewarding stimuli. Further, reduced activation in specific areas such as the putamen, caudate, insula were reduced in BD compared to UD/HC. This study is novel and deserves to be published in Neuropsychopharmacology pending

*Comments:* Manuscript is well-written, logically organized, and adequately illustrated. Overall it’s a solid paper with novel findings in the field of mood disorders thanks to the application of both functional MRI and functional connectivity measures. Two topics should however be addressed in the results and/or conclusions as I think they would help move the field (in particular treatment/prevention oriented research) forwards.

1. Did the authors attempt to relate neural measurements to behavioral findings? I noticed that reaction times/accuracy levels are not reported in either tables/figures or the results section. If not can they discuss this topic in the conclusions? For instance, cognitive impairment associated with reward processing deficits, interventions or other future directions in the research field.
2. Similarly, how do the authors view the effect of current mood state and other clinical measures on the BOLD response/connectivity and possibly behavior?