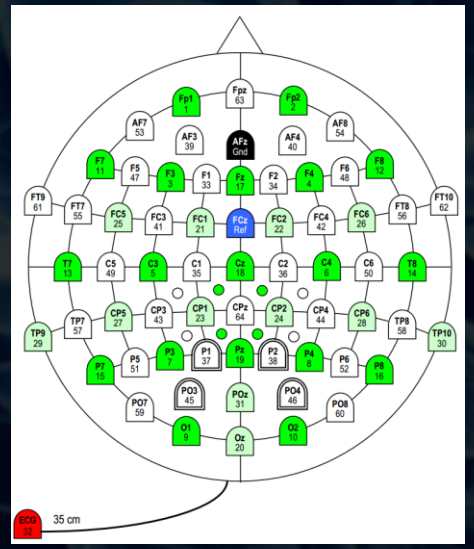
EEG-fMRI – GT-002
Target Engagement Study
Initial findings

64 channel headset



3Tesla

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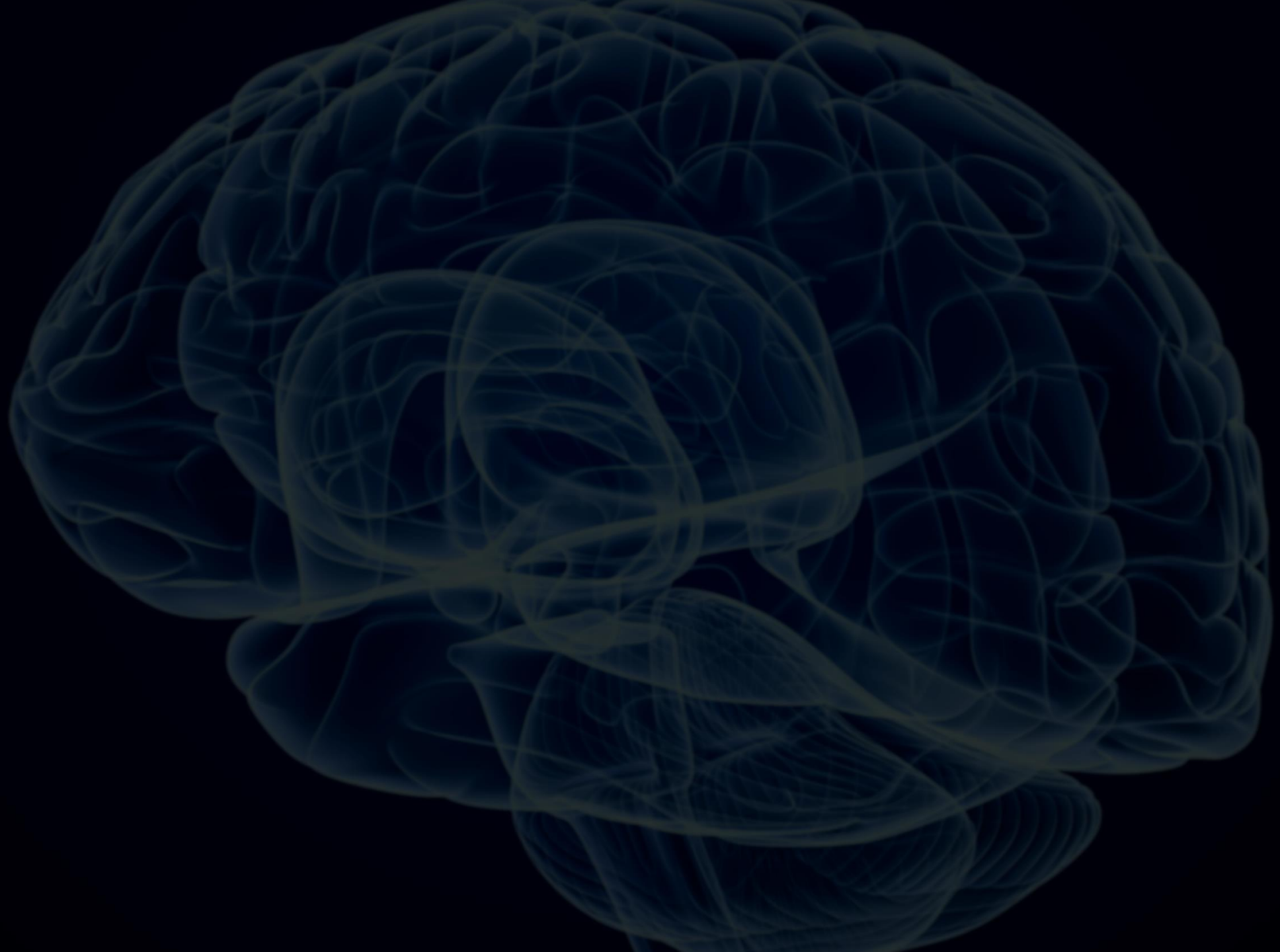
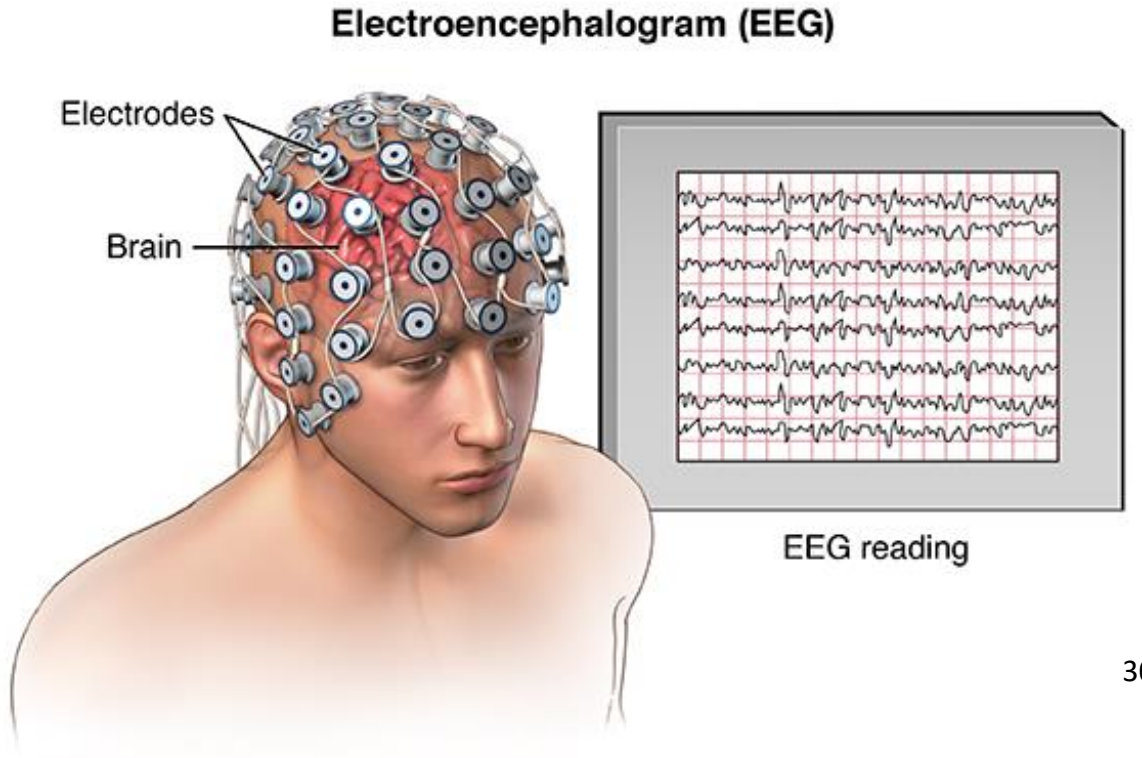
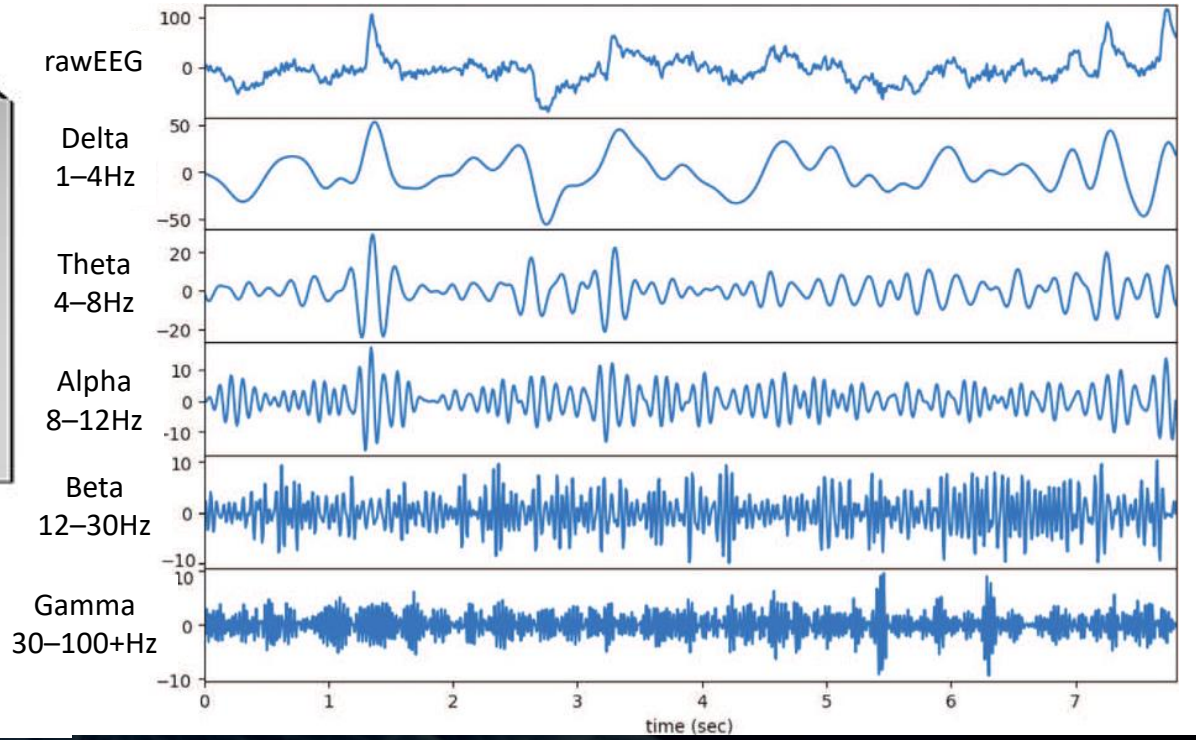


EEG as biomarker for selecting a drug for mental disorders





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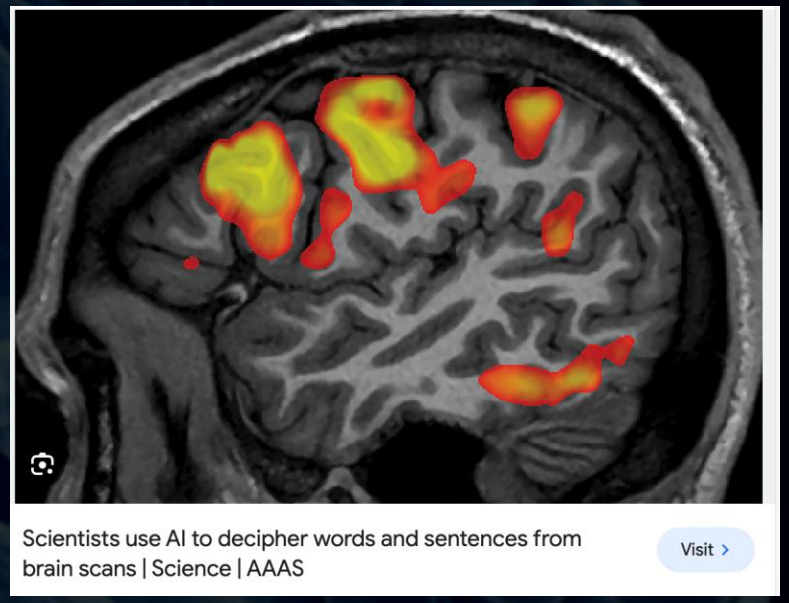
Neuroimaging



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GT-002, through its novel mode of action, can modulate network connectivity and as such delay the progression of disease

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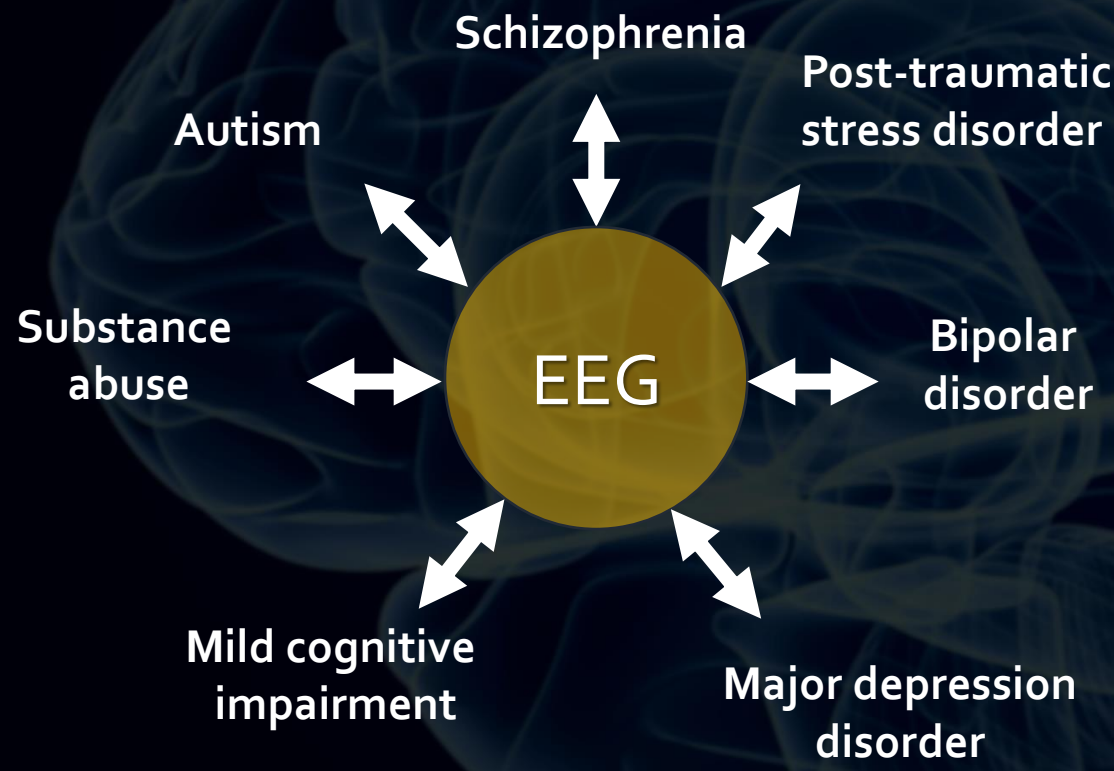
Clinical strategy for GT-002



- The effects of GT-002 on EEG is key as a biomarker in healthy drug-free subjects
- GT-002 can then be tested in patients already on different drugs

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Clinical strategy for GT-002

Neuroimaging *: A Window into the Brain*

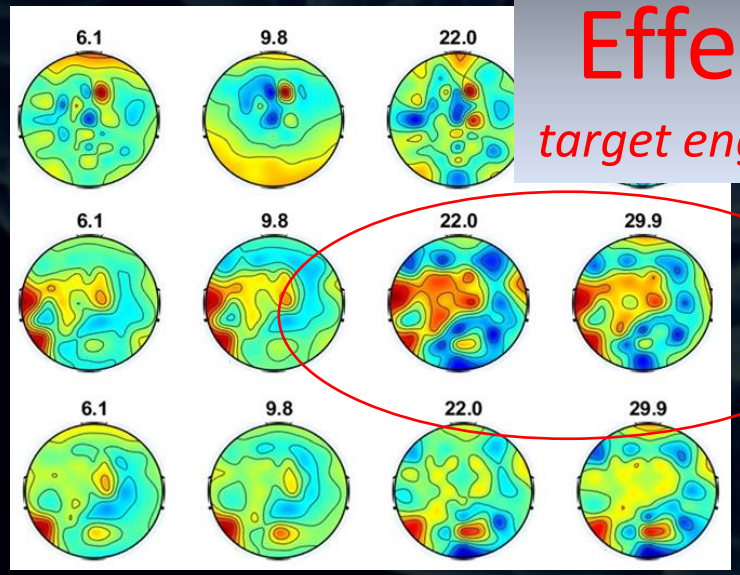
EEG recordings

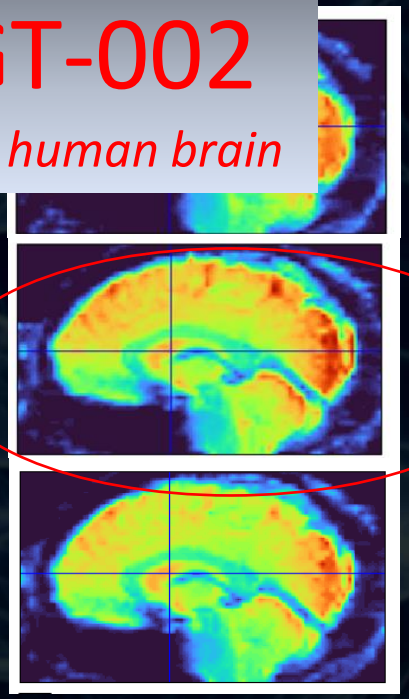
fMRI recordings

Baseline

2h

4h





Effect of GT-002

target engagement in human brain

EEG measures brain electrical activity

Heat-maps from one Subject at baseline and after GT-002 drug treatment

fMRI measures blood oxygenation levels as an indicator of increased brain activity

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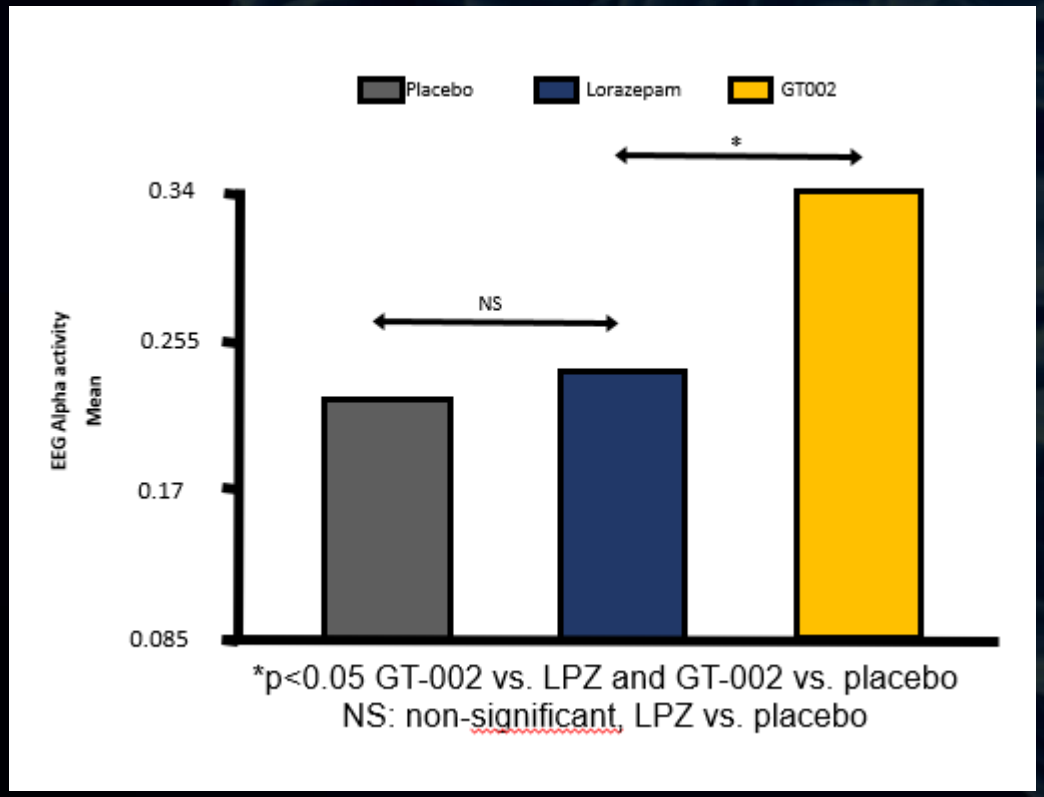
Key Results

➔ EEG power has been quantified during GT-002 and the alpha band (8-12 Hz) has been extracted.

➔ EEG alpha band is recognized as a marker of cognitive activity such as **attention** and associated with **relaxation and less anxiety**; an increase in this band may be beneficial for different pathological conditions.



CONCLUSION

- **Significant increase of EEG power on alpha band by GT-002 vs LPZ ($p<0.05$) at 2h post challenge**
- **No significant effect of LPZ vs Placebo**

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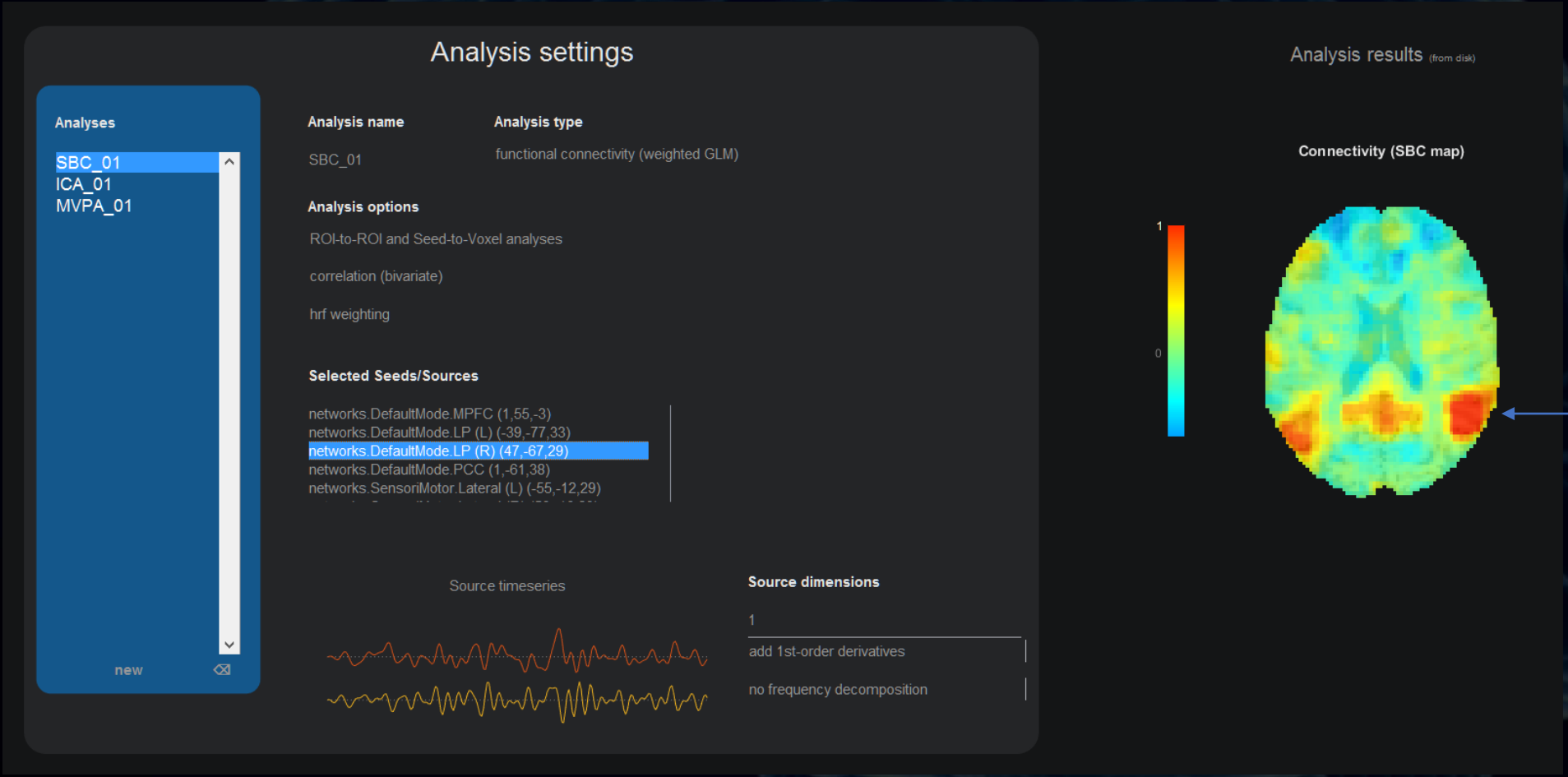
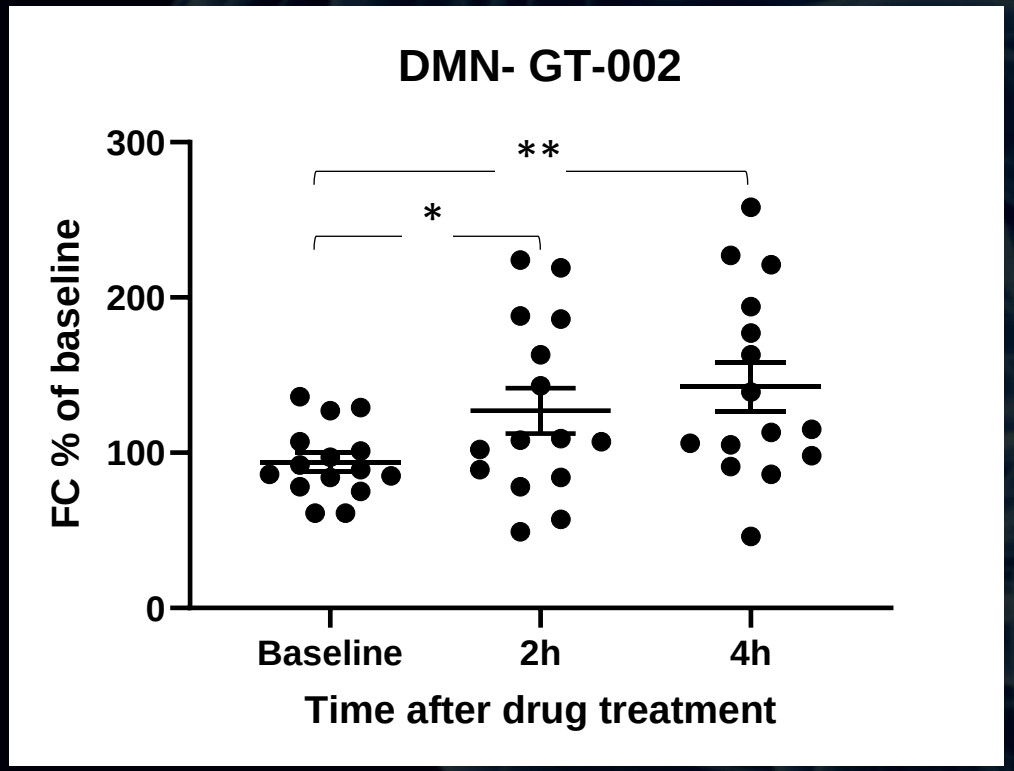
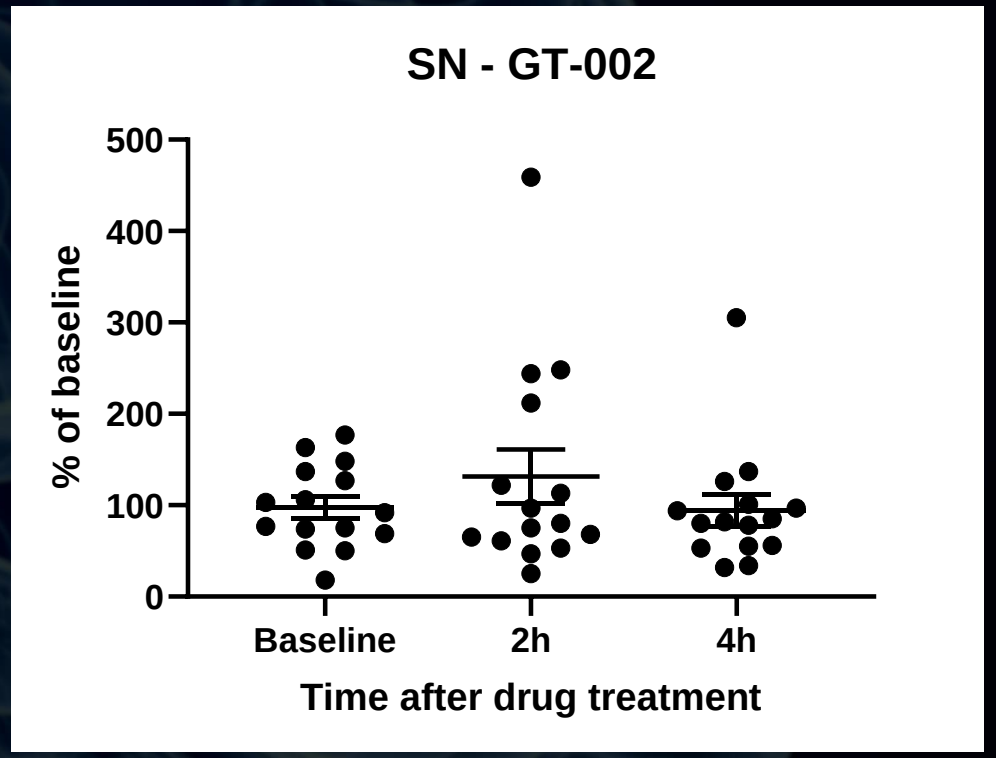
fMRI Data Analysis



Increased activity in the Default Mode Network (DMN)

Brain Network Functional Connectivity- GT-002 activation of Default Mode Network

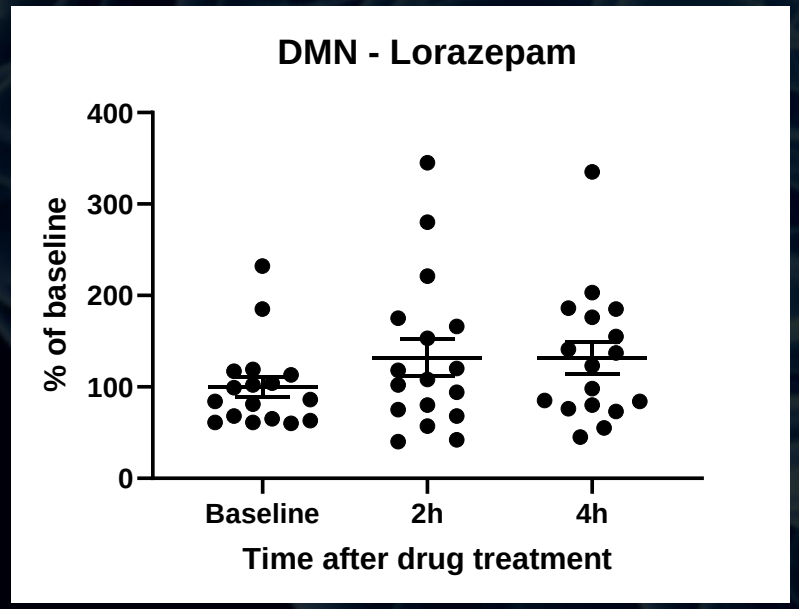


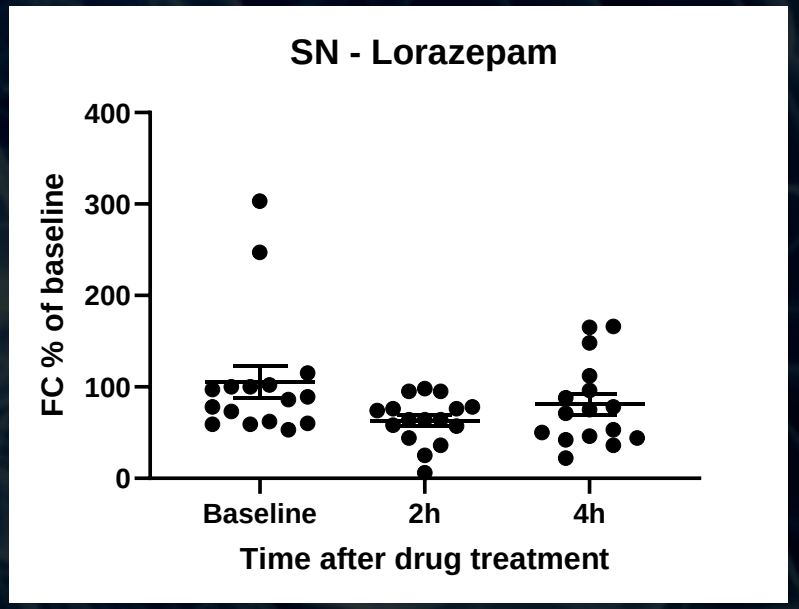


Statistically significant effect of GT-002 on DMN activity at 2 and 4h after dosing compared to baseline, $P<0.05$

GT-002 activates Default mode Network activity

Brain Network Functional Connectivity- No effect of Competitor drug Lorazepam

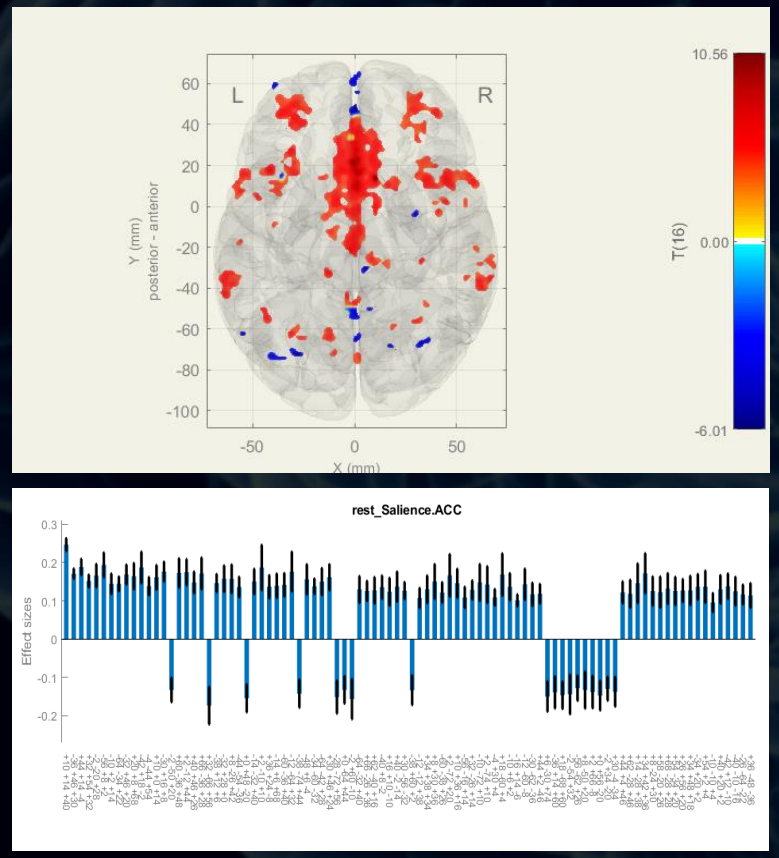




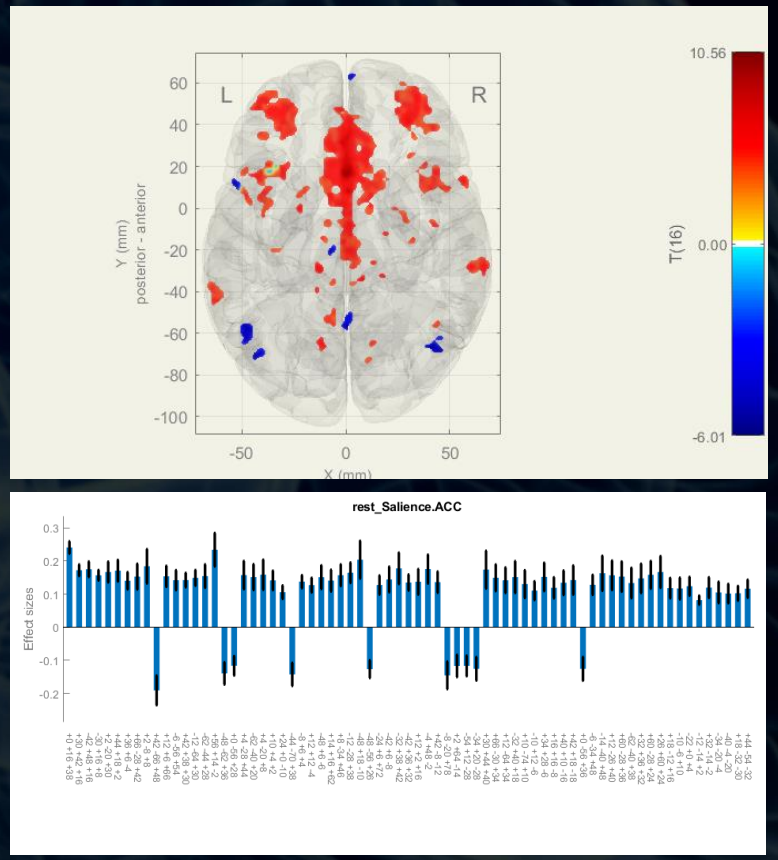
No statistically significant effect of Lorazepam on SN and DMN activity at 2 and 4h after dosing compared to baseline.,

Salience Network Anterior Cingulate Cortex

Baseline



GT-002 2h



Modulation of Salience Network