

Investigating the Role of Direct Artificial Auditory Cortical Stimulation in Mongolian Gerbils

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Rodents can interpret artificial cortical stimulation to meaningful behavioral task. This type of learning includes wide spread cortical activity. We aim to investigate how artificial direct cortical stimulation induced operant conditioning varies from natural acoustic stimuli. Gerbils are trained in auditory detection task and transfer to direct auditory-cortical electrical and optogenetic stimuli. During training electrocorticograms (ECoGs) at high spatial resolution were recorded to investigate patterns evoked by cortical stimulation related to the operant rather than the stimuli. The correlation, difference of transfer learning and cortical activity between different paradigms will be done which has several implications in designing neural prosthetics.