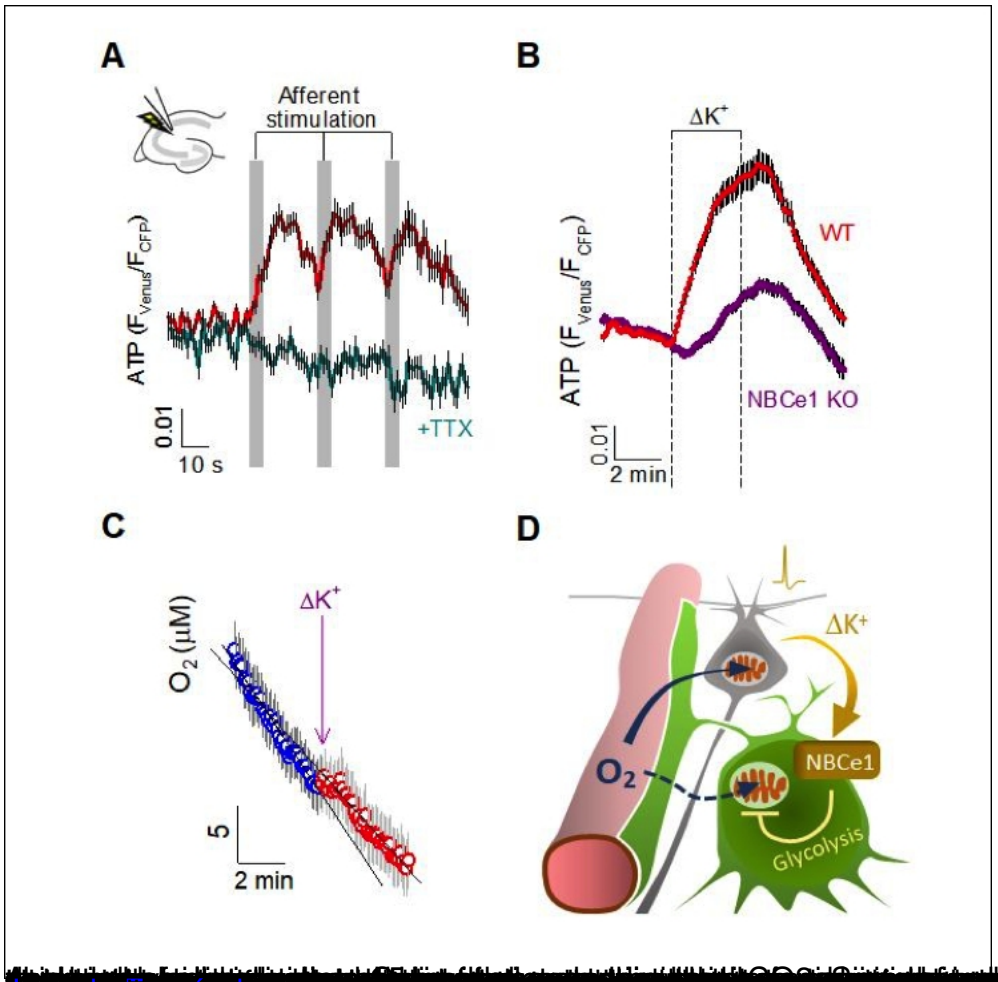
THE MYSTERY OF BRAIN ENERGY AND THE SACRIFICE OF ASTROCYTES

For decades, generations of researchers have encountered the paradox of aerobic glycolysis after neuronal activity, a process that would involve producing energy less efficiently than is actually required. In recent years, the CECs Biology Lab has focused on examining this process and understanding how brain cells manage to maintain their energy level during the great changes in demand that characterize them. In this way, an important advance in this line of research is achieved, which was reported in the *Proceedings of the National Academy of Sciences of USA*, this is the identification of a molecular mechanism that allows neurons to obtain oxygen by inhibiting the breathing of their astrocytes neighbors.


A
Afferent stimulation
ATP (F_Venus/F_CFP)
0.01
10 s
+TTX
B
ΔK+
ATP (F_Venus/F_CFP)
WT
NBCe1 KO
0.01
2 min
C
ΔK+
O2 (μM)
5
2 min
D
ΔK+
O2
NBCe1
Glycolysis