OPC have been long known to receive signals via their expression of neurotransmitter receptors and to respond to them. This regulates for example myelination. We have shown in the past that OPC also relay signals to neurons, via modulation of neuronal neurotransmitter responses upon binding of the released ectodomain of the NG2 protein, a characteristic marker of these cells. The release of the NG2 ectodomain via ADAM10-mediated cleavage is under control of neuronal network activity. We are studying the expression and local translation of distinct mRNAs at the tips of OPC processes. This is analogous to the local translation of mRNAs at synapses between neurons. We find that a surprising range of mRNAs are locally expressed in OPC processes and their translation into protein appears to be regulated by distinct neurotransmitters. These results shed new light on additional functions of OPC in addition to their role as precursors to myelinating oligodendrocytes.