Examples of electron microscopy images from the Electron Microscopy Facility in Pharmacology at McGill, taken from recent publications

*Example of post-embedding immunogold staining combined with pre-embedding DAB-based immunocytochemistry*

**Figure 1.** On this micrograph, from monkey dorsal horn of the spinal cord, note the detection of vesicular acetilcholine transporter (VACHT – dense precipitate) and GABA (immunogold particles) in an axon establishing an asymmetric synapse (arrowhead) with a dendrite (D). Regular Epon embedding. Scale bar = 0.5 µm. From Pawlowski et al., *Journal of Neuroscience* 33 (9):3727-3737, 2013.

*Example of pre-embedding immunogold staining*

**Figure 2.** Detection of a GPCR (mGlur5) in the nuclear membrane using silver-intensified immunogold staining in the spinal cord of the rat. On the left image, note the presence of mGlur5 on the plasma membrane (regular arrows) and nuclear membrane (open arrows) of neurons, but not on oligodendrocytes (oN – nuclei from oligodendrocytes). On the right image, note location of staining over the inner nuclear membrane (IN) and endoplasmic reticulum (ER). Scale bars 2 and 0.5 µm, respectively. From Vincent, Cornea et al., *Nature Communications*, 7:10604, doi: 10.1038/ncomms10604, 2016.
Example of preembedding immunogold staining combined with regular DAB-based immunocytochemistry

Figure 3. Electron micrograph of the dorsal horn of a transgenic mouse expressing the marker tdTomato on parvalbumin inhibitory interneurons (arrow indicates axonal bouton recognized with an antibody against tdTomato). Note the expression of PKCy on the plasma membrane of a dendrite (D) apposed to the inhibitory, tdTomato positive terminal. From Petitjean et al., *Cell Reports* 13 (6):1246-1257, 2015.

Example of the use of Lowicryl embedding in non-osmicated material to detect hard to label antigenic sites using post-embedding gold

Figure 4. Example of the use of Lowicryl embedding in non-osmicated material to enhance the detection of difficult antigenic sites. Here, note that the membranes and synapses are well recognized, allowing the detection of the staining on the postsynaptic thickening of an excitatory synapses (arrows indicate gold particles representing AMPA receptor subunit GluR1 sites). Johanne Ouellette and A. Ribeiro-da-Silva, still unpublished material.
Example of the use of conventional transmission electron microscopy in non-vertebrate tissues

Figure 5. High magnification images of the Drosophila neuromuscular junction, in wild type and mutant flies. From Penney et al., *Nature Communications* 7:12188, 2016.