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Image created in the  
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# Pore It On

Honourable Mention

Plants have evolved a number of interesting features to help facilitate the passage of water and sugar around their tissues. One such molecular structure highlighted here in this balsam poplar leaf blade are aquaporins. As the name implies, aquaporins are small pores that carry water but have also been demonstrated to transport CO<sub>2</sub>; their widespread occurrence indicates their significance to the plant. The top two major tissue layers are the solar panels of the leaf containing the sugar producing chloroplasts; we see an abundance of the pores here, potentially to help in CO<sub>2</sub> uptake needed to make sugar. In addition, we find a high concentration (signified by red and orange colors) of aquaporins in the leaf veins, where water pressure in particular drives sugar movement. Our research is focused on how sugar moves from shoot to root in trees – and aquaporins are the common facilitator linking manufacturing to transport. Understanding this sugar movement process will allow us to better understand how plants respond to drought and may provide targets for climate change resistant crops.