

# H is for Haematoxylin

**A-Z of Staining** - a series of articles where we share a little extra information about stains, staining techniques and some of the interesting chemicals associated.



**In our last post, we explored Gram staining and mentioned that it was more common than some of our other topics. Well, this time we are looking at an even more popular stain and one that you will be sure to come across if you work in a lab. In this post, it's H for Haematoxylin.**

Earlier in the series, we talked about [eosin](#) and the importance of the haematoxylin and eosin stain for many laboratory tests. Within the haematoxylin and eosin stain, haematoxylin is responsible for staining nuclear components blue while eosin stains the positively charged

components like cytoplasm. In this post, we will look into the history and other uses of the second part of this famous double act.

Haematoxylin is a naturally derived dye, extracted from the logwood tree. The logwood tree is native to southern Mexico, the Caribbean and Central America. Global events have occasionally threatened the supply of the necessary components for haematoxylin production and synthetic alternatives have been proposed but as yet have not been widely taken up. The uses of haematoxylin in the lab are well understood but this versatile stain also has a long history of alternative uses. Mayan and Aztec communities who used the tree in its native Central American habitat were among the first to use haematoxylin as a dye. After being introduced to Europe, the dye was used to stain textiles in shades of black, blue and purple. In most textile dyeing it has been replaced by synthetic alternatives although it was still used to dye wool black as recently as the 1920s. Haematoxylin may still be used on occasion to dye silk and leather. Even in the lab, haematoxylin has uses outside of the haematoxylin and eosin stain. There are many different variants within the haematoxylin group which are distinguished by their method of oxidation and by the choice of mordant used. Haematoxylin can be oxidised using natural methods such as sunlight or by chemical methods such as the addition of sodium iodate. A mordant is needed to form a link between the haematoxylin dye and the tissue it is staining. Potassium alum is a common choice and is used in [Harris Haematoxylin](#). Harris Haematoxylin has the additional function of being the first step in the traditional [Papanicolaou stain](#) used to screen cervical samples for cancer cells. Have you ever come across an alternative use for haematoxylin? Could you imagine using a synthetic alternative? Let us know your thoughts on this article, or share your suggestions for future articles!

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