

F is for Fontana-Masson

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.



Welcome to the sixth post of our staining A-Z, last time we spoke about [eosin](#), one of the most common laboratory chemicals. Here we will talk about the [Fontana-Masson stain](#) (also called [Masson-Fontana](#)) which can be used to help diagnose melanoma.

The [Fontana-Masson stain](#) identifies melanin, found in skin, hair, the retina or iris and some parts of the central nervous system, and argentaffin granules, typically found in the small intestine. Argentaffin granules can take up the silver stain which leaves them appearing brown or black in colour when viewed

microscopically. Proper Fontana-Masson staining protocol will show melanin or argentaffin cell granules as brown/black, nuclei as pink/red and cytoplasm as pale pink. Routine haematoxylin and eosin staining will not clearly identify melanin pigment. The particular strength of Fontana-Masson staining is in the diagnosis of conditions like amelanotic melanoma, where the granules are not as obvious. Though this stain can be effective at highlighting melanin and argentaffin granules, the traditional Fontana-Masson protocol can make it difficult to identify other cell features, such as collagen fibres. Without being able to identify the other features in the sample it is difficult to make a diagnosis. To resolve this shortcoming, the Fontana-Masson method is often combined with other techniques.

Alternative protocols have been suggested which include enhancements to the original method in order to provide better defined cellular features. One alternative, detailed by Carriel et al (2011), allows for simultaneous staining of melanin and collagen fibres. The alternative method, the Fontana-Masson picosirius method, is as good as the traditional Fontana-Masson method at highlighting melanin and demonstrates other features with the same success as haematoxylin and eosin staining. However, the Fontana-Masson picosirius method has notably better results in identifying collagen fibres. By combining the effectiveness of the original method with better identification of collagen fibres Carriel et al have developed a method which could prove useful in diagnosing melanoma. A modern alternative to these methods would be the often used immunohistochemistry, though of course this comes with additional costs.

- **Have you used Fontana-Masson staining in your lab?**
- **What did you think of the results?**
- **Would you be interested in trialling an alternative method?**

If there are any other topics you would like to see covered in our series, please get in touch. We are interested in your thoughts and feedback.

Reference

Carriel, V.S., Aneiros-Fernandez, J., Arias-Santiago, S., Garzón, I.J., Alaminos, M. and Campos, A., 2011. A novel histochemical method for a simultaneous staining of melanin and collagen fibers. *Journal of Histochemistry & Cytochemistry*, 59(3), pp.270-277.

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