



## The effects of anthocyanin-rich Myrtaceae fruits peel powder on fibrosis-associated hepatocarcinogenesis in mice

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*Area: Use of Animal Models*

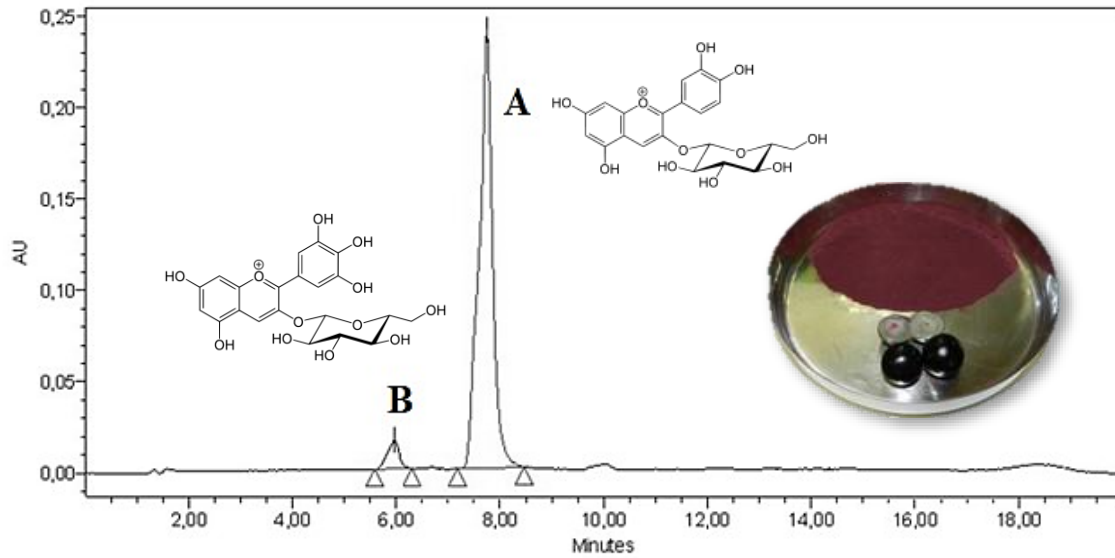
Fruits from Myrtaceae family, as jaboticaba (*Myrciaria jaboticaba* (Vell) O. Berg), jamelão (*Syzygium cumini* (L.) Skeels) and jambo (*Syzygium malaccense*), raise interest due to their high levels of anthocyanins, antioxidant compounds, and, thus, potential for chronic disease risk reduction<sup>1</sup>. Therefore, the study evaluated whether the ingestion of jaboticaba, jamelão or jambo peel powder attenuates fibrosis-associated hepatocarcinogenesis. Neonatal female C3H/HeJ mice were submitted to a diethylnitrosamine (DEN)/carbon tetrachloride (CCl<sub>4</sub>)-induced fibrosis-associated hepatocarcinogenesis model. Mice also received basal diet or basal diet containing 2% of jaboticaba, jamelão or jambo dehydrated peels for 10 weeks. HPLC analysis of dehydrated fruit peels revealed high levels of anthocyanins in jaboticaba (802.89±22.88 mg/100g), jamelão (575.95±9.42 mg/100g) and jambo (156.05±10.39 mg/100g). These fruits displayed different types of anthocyanins (Figures 1-3). Interestingly, only the ingestion of basal diet containing jamelão peel powder attenuated liver fibrosis compared to DEN/CCl<sub>4</sub> (Figure 4). Mechanisms will be evaluated, as well as the effects of these fruits on the development of preneoplastic/neoplastic liver lesions.

### References

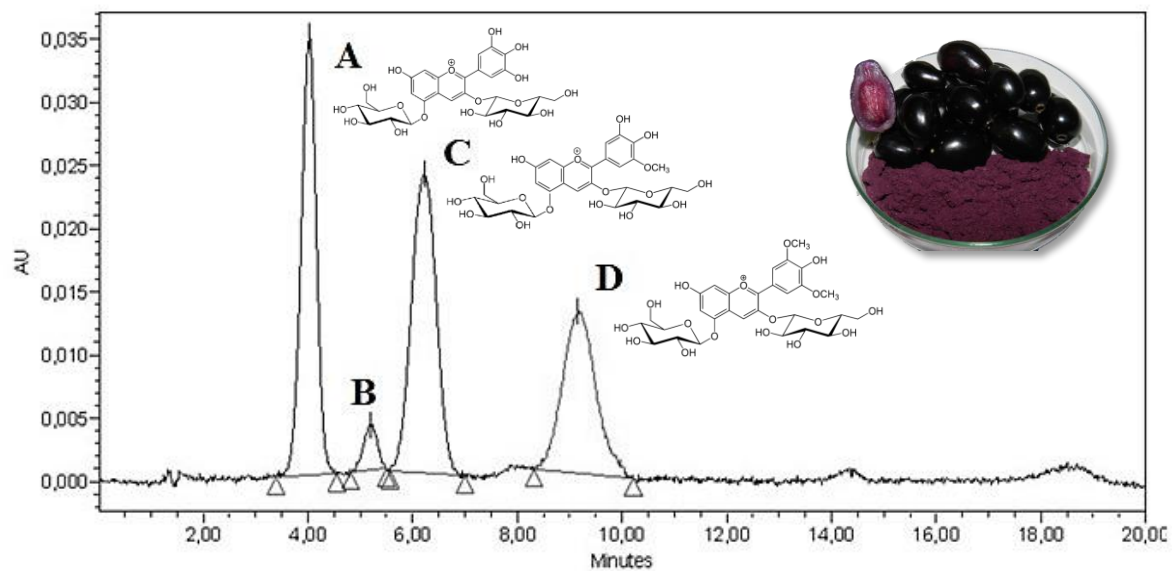
<sup>1</sup>He *et al.*, 2010: <https://doi.org/10.1146/annurev.food.080708.100754>



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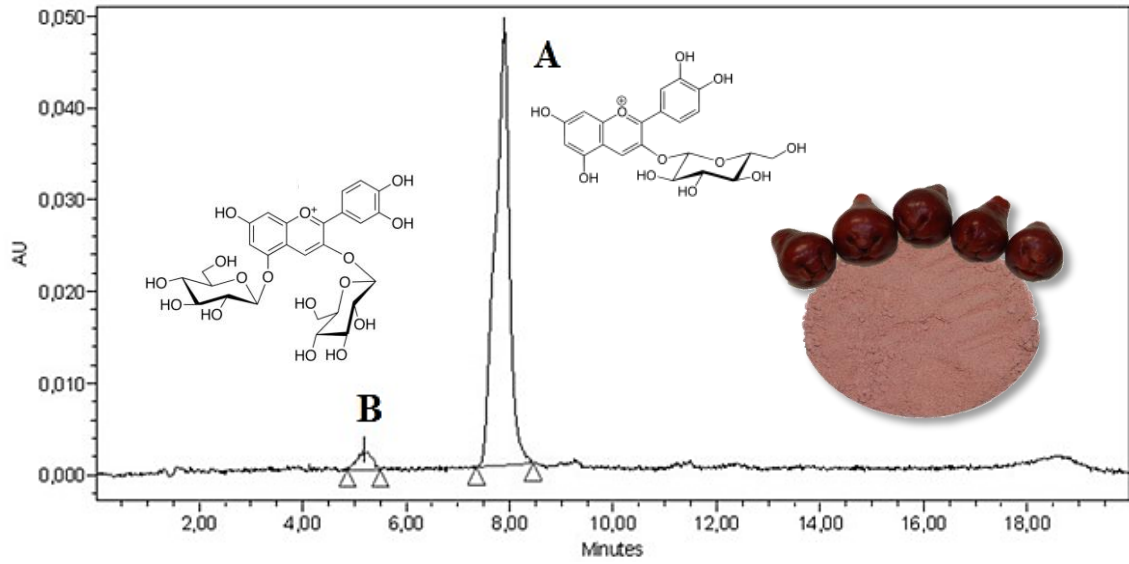
**Figure 1.** Chromatogram of the anthocyanins of jaboticaba peel powder: **(A)** cyanidin-3-glucoside and **(B)** delphinidin-3-glucoside.



**Figure 2.** Chromatogram of the anthocyanins of jamelão peel powder: **(A)** delphinidin-3,5-diglucoside, **(B)** cyanidin-3,5-diglucoside, **(C)** petunidin-3,5-diglucoside and **(D)** malvidin-3,5-diglucoside.



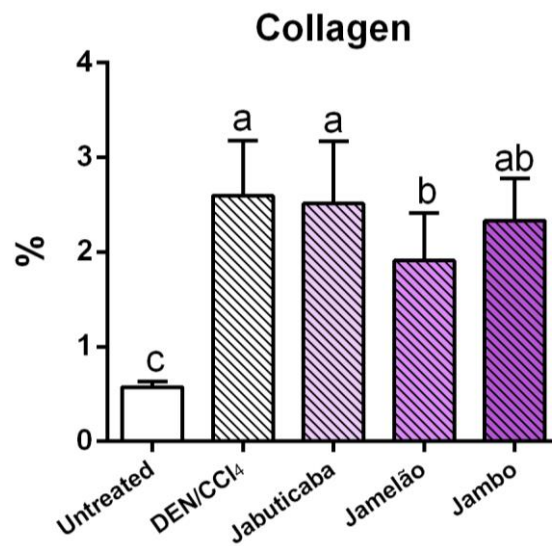
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**Figure 3.** Representative chromatogram of the anthocyanin of jambo peel powder: **(A)** cyanidin-3-glucoside and **(B)** cyanidin-3,5-diglucoside.



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**Figure 4.** Effects of Myrtaceae fruits peel powder on liver fibrosis (Sirius red). Data are mean + S.D. n=13-14 mice/group. Different letters correspond to statistical difference by ANOVA and *post hoc* Tukey test ( $p < 0.05$ ).