Antioxidant Compounds in red wines from South America

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Wine polyphenolic compounds became particularly important during the last two decades due to their antioxidant activity. The antioxidant activity relates wine consumption to potential benefits on human health. Moreover, the use of wine polyphenols to inhibit lipid peroxidation has also been proposed. In view of the importance and potential use of these compounds, the present research work aims at determining the polyphenolic content and antioxidant activity of South American red wines produced with different grape varieties and from different production regions. A total of 334 wines were analyzed. Total polyphenols (TPI) were determined by the Folin-Ciocalteau mehod and total monomeric anthocyanins (TA) were determined using the AOAC official method. The *in vitro* antioxidant activity was measured using the methods of oxygen radical absorbance capacity (ORAC) and free radical scavenging activity (DPPH•).The results of the wines analyzed showed that in Argentina, Cabernet Sauvignon wines had a significantly higher TPI compared to the other grape varieties. In addition, Cabernet Sauvignons together with Malbec wines, also showed the highest TPI in Chile. The TA did not show the same tendency, being significantly higher for Malbec wines in the center-west of Argentina, Tannat wines in Campanha (Brazil) and Cabernet Sauvignon wines in Uruguay. Regarding the AA, ORAC values were higher for Tannat wines in most of the regions. This suggests that the antioxidant activity is not dependent on the TPI or TA, but probably influenced by some individual polyphenols which show high antioxidant capacity. Finally, the DPPH• did not show much influence among the grape varieties and regions, being the Tannat wines from the South of Uruguay the only ones showing a significantly higher value. In conclusion, some differences in the polyphenolic content and antioxidant activity of South American red wines were observed, depending on their grape variety and production region. Among all the varieties studied, Tannat seems promising, showing the highest antioxidant activity in most cases.