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Book of Abstracts

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Food supplementation in sport horses with *Boswellia serrata*, *Curcuma longa* and *Verbascum thapsus*: antioxidant and anti-inflammatory effects and serum proteome modification

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Intense exercise can be the cause of inflammation and oxidative stress with subsequent production of reactive oxygen species (ROS). The latter pathophysiological processes are interdependent and each one can induce the other creating a vicious circle. In the present study, we evaluated the effect of a complementary feed (CF) intended for sport horses (Dolhorse NBF Lanes srl, Milan, Italy) and containing *Curcuma longa* (with its polyphenol curcumin), *Verbascum Thapsus* (containing verbascoside) and *Boswellia serrata* (with its boswellic acids that are pentacyclic terpenoids), due to their antioxidant and/or anti-inflammatory activities. In particular, the CF ability to modulate the expression of some genes involved in the antioxidant and inflammatory responses (SOD, IL-1, IL-6, TRL4, IKBKB, NFEL2L in blood monocytes, by RT-PCR) and the serum protein (by using two-dimensional electrophoresis coupled to mass spectrometry) has been evaluated in jumping horses. Sixteen animals (Authorization n° 238/2021-Ministry of Health. prot. E81AC.14) were daily supplemented with a placebo (n.8; CTR) or CF (n.8; TREAT), and blood samples were collected at day zero (T0, immediately before the start of the trial) and after 10 days of the daily supplementation (T1) and used for the afore mentioned assays. Results showed that CF supplementation was not able to modulate the gene expressions here investigated, even if a trend towards downregulation was observed for IKBKB and IL-1 genes. Thirty-two protein spots were found differentially expressed at T1 in TREAT with respect to CTR groups. Protein spots identification suggested a change of expression of immunoglobulin chains, alfa-2-HS-glycoprotein, plasminogen and vitamin D binding protein after CF supplementation. The present results suggest that phytopharmacotherapies may represent a valid aid to traditional therapies in sport horses that are inevitably subject to inflammatory processes and oxidative stress by virtue of their activities