



Boswellic acid attenuates asthma phenotype by downregulation of GATA3 via inhibition of pSTAT6

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ABSTRACT. To study the role of boswellic acid in reducing asthma phenotype severity and the relationship between the expression of pSTAT6 and GATA3, thirty-six mice were randomly divided into normal control group, asthma group, and boswellic acid group (treatment group). The asthma model was established through an intraperitoneal injection of sensitization liquid (0.15 mL aluminum hydroxide gel at 88.67 mg/mL and 0.05 mg ovalbumin). pSTAT6 and GATA3 expression levels in peripheral blood were detected by reverse transcription-polymerase chain reaction and Western blot analysis. pSTAT6 and GATA3 gene expressions in the asthmatic group were significantly higher than in the normal control group; they were markedly lower in the treatment group than the asthma group, and there was no significant difference when compared with the normal control group. The pSTAT6 expressions in the asthma, control and treatment groups were 2.256 ± 0.125 , 0.524 ± 0.210 , and 0.897 ± 0.134 at gray level, respectively. The GATA3 expressions in the asthma, control, and treatment groups were 3.521

± 0.631 , 0.435 ± 0.136 , and 0.743 ± 0.149 at gray level, respectively. pSTAT6 and GATA3 expression levels were similar in the treatment and control groups. GATA3 expression had a positive correlation with pSTAT6 expression. Boswellic acid may improve asthma symptoms by inhibiting pSTAT6 expression, which consequently reduces GATA3 expression.

Key words: Asthma; Boswellic acid; pSTAT6; GATA3