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Macrophage mediated host defense against *Salmonella typhimurium* by *Morus alba* LSung Yeon Kim¹, BoYoon Chang¹, DaEun Kim¹, JiHye Park¹, BongSung Koo², Hyuncheul Lee²¹Wonkwang University, Republic of Korea²ForBioKorea Co. Ltd., Republic of Korea

Climatic effects are predicted to include crowding, famine, water contamination, human migration, and alterations in vector ecology, all of which increase infectious diseases. The innate immune system, play a crucial part in the initiation and subsequent direction of adaptive immune responses, as well as participating in the removal of pathogens that have been targeted by an adaptive immune response. Moreover, because there is a delay of 4–7 days before the initial adaptive immune response takes effect, the innate immune response has a critical role in controlling infections during this period. We evaluated that *Morus alba* extract enhance immunostimulating activity and defense effects of *Morus alba* extract and pomace on bacteria infection mice model. The present study was carried out to investigate the immunomodulating activity of *Morus alba* L. on the expression of Nitric Oxide (NO), tumor necrosis factor alpha (TNF- α) and phagocytic uptake in macrophages. Multiple signaling molecules of the TLR4 signaling pathway were also detected. We have chosen experimental bacterial infection with *S. Typhimurium*. *Morus alba* extract stimulated the production of NO and TNF- α and phagocytic activity in RAW 264.7. *Morus alba* activated macrophages through the mitogen-activated protein kinase and nuclear factor- κ B signaling pathways downstream from TLR4. *Morus alba* extract and pomace enhances the survival rate of salmonella infected mice by augmenting the phagocytosis activity of macrophages. The observed activation of macrophage and induction of cytokines results on fruit of *Morus alba* L. treatment are the most probable reasons for the reduced mortality of bacteria. The reported data clearly support the hypothesis that *Morus alba* L. acts as an immunomodulator. "This work was supported by the Industrial Core Technology Development Program (10067293, Development of immunostimulatory feed additive and vaccine adjuvants for animal from mulberry) funded by the Ministry of Trade, Industry and Energy (MOTIE, Korea)"

Biography

Sung Yeon Kim has completed PhD from Seoul University of Pharmacy. She is active in research activities in the field of medicinal plants. Several studies have been published in various journals and presented various research papers by oral / poster at the national and international seminars

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