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Phytochemistry and medicinal properties of safflower *Carthamus tinctorius* L. flowers grown in Kazakhstan

Turgumbayeva A A¹, Esetova K U¹, Ustenova G O¹, Rakhimov K H D¹ and Samir A Ross²

¹Kazakh National Medical University, Kazakhstan

²University of Mississippi, USA

Carthamus tinctorius L. is commonly known as safflower. *C. tinctorius* extracts and oil are important in drug development with numerous pharmacological activities in the world. This plant is cultivated mainly for its seed, which is used as edible oil. It is also known as "Safflower" and has been a subject of several chemical and pharmacological studies. *Carthamus tinctorius* L. is an important medicinal plant of Kazakhstan. It is used especially for wound healing, antimicrobial, anti-inflammatory, cytotoxic, spasmolytic, jaundice and as an antispasmodic. Chemical studies have the presence of various classes of compounds, the main being flavonoids, quinones, coumarines, volatile oil, free fatty acids and amino acids. The extract of this plant as well as pure compounds isolated from it, have been demonstrated to possess multiple pharmacological activities. In this review, we have explored the Phytochemistry and pharmacological activities of *Carthamus tinctorius* L. as well as highlight its activity properties as a medicinal agent. An ointment of essential oil from safflower flowers was grown in Kazakhstan for creating ointment of flowers safflower (*Carthamus tinctorius* L.) optimum composition of the excipients. So several models were created ointment like based - emulsion, a slurry, combined with application of various excipients - sunflower oil, glycerol, paraffin oil, lanolin, etc., Emulsifiers - Tween-80, T-2 and others. The most efficient composition of the technological parameters was ointment base with the following composition: essential oil obtained from the flowers of safflower 9.0 g., sunflower oil 40 ml., T-2 5 g., Purified Water 46.8 ml., *Oleum menthae piperitae* 0.2 ml. An experimental industrial series of ointment based medicinal plant *C. tinctorius* L. studies was obtained in animals (rabbits, guinea pigs, white rats) which showed harmless and good tolerability.

Biography

Turgumbayeva AA did PhD from Asfendiyarov S. Kazakh National Medical University, School Pharmacy, for specialty "Technology of pharmaceutical production". After graduating from university, she worked as an intern researcher in LLP "Company Ak Mai". In 2010, he did Master's degree on specialty "Chemical technology of organic substances" Kazakh National University. Al-Farabi. In 2012, he entered PhD Doctoral on a specialty "Technology of pharmaceutical production" the Kazakh National Medical University. S. Asfendiyarov, School Pharmacy. She has more than 35 scientific papers, 3 articles with impact factor, 1 article in *Scopus*, 4 Elaboration and approval of the PAND for the preparation substances. She has passed scientific training in Xinjiang Technical Institute of Physics and Chemistry in Urumqi (China) for 1 month (June 2011), University of Mississippi, Oxford (USA) for 3 months (from 17.10.2013 till 01.13.2014), the Armenian Medical University, Yerevan, as well as the Lublin Medical University, Lublin (Poland).

aknurik_88@mail.ru

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