

# A honey of a natural sunblock for UV-protective clothing: Honeysuckle extract

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With those months of blazing summer sunshine head, scientists are reporting that an extract of the honeysuckle plant could make a highly-effective natural coating for clothing designed to protect people from exposure to potentially harmful ultraviolet (UV) rays from the sun. Their report appears in ACS' journal *Industrial & Engineering Chemistry Research*.

Ren-Cheng Tang and Sha-Sha Sun note the growing trend among consumers -- concerned about the risk of skin cancer and premature aging of the skin — toward relying on [clothing](#) for protection from the sun ultra-violet rays. Natural UV-protection coatings can have advantages, including production in a more sustainable fashion with less environmental impact. They note that honeysuckle has been used for centuries in traditional Chinese medicine to treat colds and fever. An ingredient in honeysuckle is used to preserve food and as additive in cosmetics to keep the skin looking younger. In their new study, the scientists wanted to see whether honeysuckle extract could boost wool's ability to block UV rays.

They found that wool coated with honeysuckle extract blocked UV rays much more effectively than untreated wool, giving the fabric a high UV protection factor. The extract was durable and remained active on wool, even after a long exposure to sunlight and laundering. The researchers conclude that honeysuckle extract shows significant potential as a natural UV-blocking agent for clothing.

**More information:** “Adsorption and UV Protection Properties of the Extract from Honeysuckle onto Wool”, *Ind. Eng. Chem. Res.*, 2011, 50 (8), pp 4217–4224. [DOI: 10.1021/ie101505q](https://doi.org/10.1021/ie101505q)

## Abstract

The adsorption and UV-protection properties of water-extract from honeysuckle whose main ingredient is chlorogenic acid onto wool were studied. The effect of initial pH on the adsorption was investigated, and the extent of adsorption was found to increase with decreasing pH in the range 2–7. Four kinetic equations, namely pseudo-first-order, pseudo-second-order, Elvoich, and intraparticle diffusion equations were employed to investigate the adsorption rates. The pseudo-second-order model provided the best fit to the experimental data and was indicated with the activation energy of 47.91 kJ mol<sup>-1</sup>. The equilibrium adsorption data were fitted by Freundlich, Langmuir, Redlich–Peterson, and Langmuir–Nernst isotherm models. The adsorption behavior accorded with Redlich–Peterson and Langmuir–Nernst models well. The honeysuckle extract showed good build-up properties, and the UV transmittance in the range of UVA and UVB of wool treated with honeysuckle extract decreased obviously while the ultraviolet protection factors increased. The extract of honeysuckle may be developed as a natural UV-absorbing agent applied to wool finishing.

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