

## **Ultrafast photoprotective properties of skin chromophores**

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Skin is often cited as the body's biological defense system against ultraviolet radiation and eumelanin, the pigment that gives skin its color, is presumed to play a major role in this protection scheme. Other skin chromophores such as the nucleobases, that form the building blocks of our genetic coding material, additionally possess their own inherent photoprotective properties.

Photoprotection, in general, relies on the ability of the chromophores to quickly and efficiently dissipate harmful ultraviolet photon energy into heat. These internal conversion processes occur on timescales as short as a trillionth of a second and it is therefore not surprising that many of the mechanistic details are not yet well understood. In order to advance this problem we have applied ultrafast, gas-phase pump-probe spectroscopy, specifically time-resolved photoelectron spectroscopy, to study the photodynamic response of skin chromophores such as substituted indoles (eumelanin subunits) and nucleobases.

### **Short Biography:**

Susanne Ullrich received her Diplom in Physics from the Goethe University of Frankfurt in 1997 and a Ph.D. in chemistry from the University of York in 2002 under the direction of Prof. Klaus Müller-Dethlefs. She was awarded a Feodor-Lynen Fellowship from the Alexander v. Humboldt Foundation to carry out postdoctoral work with Dr. Albert Stolow at the Steacie Institute for Molecular Sciences, National Research Council of Canada. In 2004, she joined the faculty of the Department of Physics and Astronomy at the University of Georgia and was promoted to full professor in 2019.