

## Development of skin care medicine using environmental-sensitive redox nanoparticles

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In this study, a redox nanoparticle (RNP), which is consist of polymeric micelle containing nitroxide radicals, was developed as nano-sized ROS scavenger for treatment of ultraviolet (UV)-induced skin damage. When RNP was applied to the skin by iontophoresis, UV-induced damage and melanin production in the skin were prevented. In addition, a redox injectable hydrogel (RIG) with prolonged drug retention time in the skin was developed for enhancing the ROS scavenging efficacy, using a redox polyion complex flower micelle containing nitroxide radicals. Both RNP and RIG are anticipated as high performance ROS scavengers for treatment of UV-induced skin damage.