

Radiation- and photoinduced free-radical transformations of hydroxyl-containing dipeptides

A. Sladkova, O. Shadyro

Belarusian State University, Minsk, Belarus, e-mail: sladkova-an@yandex.ru

It has been established in the present work that carbon skeleton destruction in dipeptides molecules, containing threonine or serine residues in N-terminal side-chain of the molecule, under radiolysis of their aqueous solutions is determined by the presence of unprotonated amino group which is accessible to electrophilic $\bullet\text{OH}$ radical attack. The process of carbon-carbon bond rupture in molecules of such compounds occurs owing to the formed nitrogen-centered radicals fragmentation, which can be carried out by means of the coordinated mechanism with simultaneous rupture of two vicinal to the radical centre bonds. The possibility of threonine N-centered radicals generation, which are formed due to Norrish type I disintegration of threonyl-threonine, valyl-threonine and N-stearoyl-threonine molecules, and of their further fragmentation by means of the coordinated mechanism with acetaldehyde formation under UV-irradiation of these compounds has been shown.