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## Effect of Cevimeline on Radiation-Induced Salivary Gland Dysfunction and AQP5 in Submandibular Gland in Mice

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**Abstract:** The aim of this study was to clarify the effects of the muscarinic receptor agonist, cevimeline, on saliva flow and expression of aquaporin5 (AQP5) in submandibular gland after X-ray irradiation. Using a previously established radiation-induced xerostomia model mouse, saliva flow from at 7 days before irradiation to at 28 days after irradiation was investigated in mice that were treated with cevimeline before or after irradiation. Radiation caused a significant decrease in saliva flow compared with nonirradiated salivary glands. Cevimeline post-treatment also caused a significant decrease in saliva flow. In contrast, cevimeline pre-treatment did not significantly decrease saliva flow. Expression of AQP5 fluorescent intensity and mRNA were also analyzed. Irradiation significantly decreased expression of AQP5 in submandibular gland. However, pre-treatment with cevimeline prevented this decrease in AQP5 expression. These data suggest that pretreatment with cevimeline prevents radiation-induced xerostomia and radiation-induced decrease in expression of AQP5 in submandibular gland.

**Key words:** [Cevimeline](#), [Aquaporin5](#), [Radiation](#), [Xerostomia](#), [Salivary gland](#)

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