SP content in rabbit's small intestine and in the brain. Those anticholinesterases which penetrate the blood-brain barrier (paraoxon) decreased the concentration of SP in the brain, but those which do not pass that barrier did not change it. Both these anticholinesterases decreased the SP content in small intestine. HC-3, choline acetylase inhibitor, increased the SP content in the small intestine. It was surprising to find that this substance decreased the SP content in the brain. This effect might well be due to asphyxia produced by HC-3.

The results of the present experiments indicate that substances which affect acetylcholine metabolism can at the same time change the content of SP in the small intestine and in the brain of rabbit.

Amount of SP (U/g) in brain and small intestine of rabbit after administration of drugs

Drug	No. experiments	Brain	P	Small intestine	P
Control	5	16.0 ± 1.2		2.53 ± 0.2	
Phospholine iodide	5	16.1 ± 1.1		1.48 ± 0.15	< 0.025
Paraoxon	5	9.5 ± 1.2	< 0.05	1.55 ± 0.17	< 0.05
HC-3	5	8.0 ± 0.8	< 0.025	5.70 ± 0.7	< 0.025

Résumé. Les substances anticholinestérasiques s'avèrent capables de réduire la concentration en substance P du cerveau et de l'intestin du lapin. Cependant l'hémicholinium No 3 augmente la concentration de la substance P de l'intestin et diminue celle du cerveau.

B. Radmanović and M. Rakić

Department of Pharmacology, Medical Faculty, Beograd (Yugoslavia), 22 January 1969.

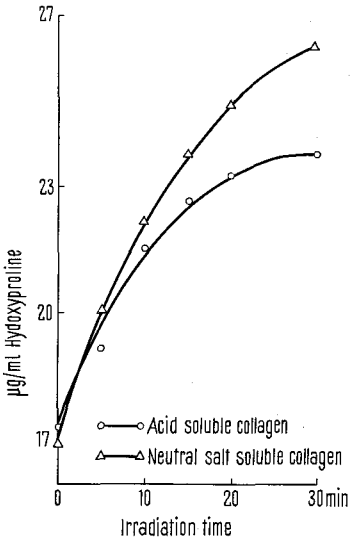
Changes in Hydroxyproline Content of Human Dermal Collagen Following UV-Irradiation in vitro

In contrast to senile skin, actinic elastosis reveals a decrease in hydroxyproline content of connective tissue[1]. This observation needs further explanation; there might be a true decrease in hydroxyproline content of collagen and elastin damaged by chronic actinic influence, or this decrease might only be a relative one, caused by the participation of other substances which do not contain hydroxyprolin in the formation of the pathologic ('elastotic') material. The latter assumption seems more likely. As a contribution to this still unsolved problem in actinic elastosis, changes in hydroxyproline content of human dermal collagen were investigated following UV-irradiation in vitro.

Material and methods. Dermal tissue of human abdominal skin was separated from adherent subcutis and epidermis, minced, freeze-dried and extracted with either 1% acetic acid ('acid soluble collagen') or 0.05 *M* phosphate buffer pH 7.2 ('neutral salt soluble collagen')[2]. Irradiation of the 2 collagen solutions with UV-light (Hanau S 200, distance 20 cm) was performed in a petri dish under steady stirring and cooling. In 5 min intervals for $^1/_2$ h, samples were withdrawn. Hydroxyproline was determined according to the micromethod of Stegemann[3]. The values given were the mean of triple investigations in 5 irradiation experiments.

Results. Irradiation with UV-light causes an increase in hydroxyproline content of acid soluble and neutral salt soluble collagen. Control experiments with UV absorptive filters only gave insignificant changes. The relative increase of hydroxyproline content was higher in acid soluble collagen (+ 50%) than in neutral salt soluble collagen (+ 40%). For details see Figure.

Comment. Hydroxylation of protein- or peptide-bound proline can be effected either by oxygen directly or via the formation of hydrogen peroxide[4,5]. Both mechanisms might be involved in the experiments presented here. It must be assumed from the data collected in other studies[6] that the energy reaching the dermal connective tissue in vivo is sufficient to cause hydroxylation of bound proline. As UV-irradiation in vitro increases hydroxyproline content of collagen, it seems most unlikely that UV-irradiation in vivo produces an opposite effect.



Increase in hydroxyproline content of acid soluble and neutral salt soluble collagen.

Zusammenfassung. UV-Bestrahlungen von menschlichem dermalem Kollagen führen in vitro zu einer Zunahme des Hydroxyprolingehaltes.

W. P. Raab

Vienna University Medical School, Department of Medical Chemistry, A-1090 Wien (Austria), 13 January 1969.

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