

Role of vascular renin-angiotensin for the development of hypertension

メタデータ	言語: jpn 出版者: 公開日: 2022-11-07 キーワード (Ja): キーワード (En): 作成者: Miyamori, Isamu メールアドレス: 所属:
URL	https://doi.org/10.24517/00067594

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 International License.



1989 Fiscal Year Final Research Report Summary

Role of vascular renin-angiotensin for the development of hypertension

Research Project

Project/Area Number

63440091

Research Category

Grant-in-Aid for General Scientific Research (A)

Allocation Type

Single-year Grants

Research Field

内分泌・代謝学

Research Institution

KANAZAWA UNIVERSITY

Principal Investigator

MIYAMORI Isamu KANAZAWA UNIVERSITY, LECTURER, 医学部附属病院, 講師 (40142278)

Co-Investigator(Kenkyū-buntansha)

MORISE Toshio KANAZAWA UNIVERSITY, ASSISTANT, 医学部附属病院, 助手 (40191027)

Project Period (FY)

1988 - 1989

Keywords

Vascular Wall / Renin / Angiotensin / Hypertension

Research Abstract

Angiotensin II (ANG II) generation from the isolated mesenteric arteries was measured in control rats, and in hypertensive rat models. In order to elucidate the possible role of the vascular renin-angiotensin system (RAS) for the control of blood pressure, the effect of angiotensin converting enzyme (ACEI) on the ANG II production was also examined. The perfusion pressure (PP) response to endothelin (ET), a novel vasoconstrictor peptide, was also examined in the mesenteric artery preparation obtained from rats with various ANG II levels. In the control rats, 43.0 ± 12.0 pg/h of ANG II was released in the perfusate, which was not significantly changed by nephrectomy (Nex), in spite of the decreased plasma renin activity (PRA) and plasma ANG II concentration in the circulation. ACEI treatment significantly decreased blood pressure (BP) in the control and Nex rats, in parallel with a decreased vascular ANG II generation. In deoxycorticosterone acetate-treated rats, PRA, plasma aldosterone and ANG II concentration were significantly suppressed, and ACEI

administration induced a slight but significant decrease in BP. ET produced a sustained increase in PP in the control rat mesenteric arteries. The increase was more potent than ANG II on molar basis, and was not inhibited by ANG II analogue. In conclusion, the present results support that the ANG II is generated in the vascular wall independent of RAS in the circulation, and suggest that the vascular RAS is partly responsible for the antihypertensive action of ACEI. A lack of inhibition of pressure response to ET by ANG II analogue suggests that ET and ANG II possess their own specific receptor

Research Products (9 results)

AllOther

AllPublications (9 results)

[Publications] Isamu Miyamori: "Angiotensin II generation in mesenteric arteries in rats:effects of nephrectomy,deoxycorticosterone and dexamethasone." Endocrinol Jpn.(印刷中).▼

[Publications] I.Miyamori: "The role of intestinal bacteria in the metabolism of aldosterone in man." Hormone Res.29. 147-150 (1988)▼

[Publications] Hideo Koshida: "Mineralocorticoid and renal receptor binding activity of 21-deoxy aldosterone." Endocrinology. 126. (1990)▼

[Publications] R.Takeda: "Effects ofmineralocorticoids on angiotensin II generation in vascular bed." The Adrenal and Hypertension. Raven Press. 57. 135-143 (1989)▼

[Publications] Isamu Miyamori, Takao Matsubara, Yoshiyu Takeda, Hideo Koshida, Ryuichiro Soma, Ryoyu Takeda.: "Angiotensin II generation in mesenteric arteries in rats: effects of nephrectomy, deoxycorticosterone and dexamethasone." Acta Endocrinol Jpn.(1990)▼

[Publications] I.Miyamori, H.Koshida, T.Matsubara, M.Ikeda, Y.Takeda, R.Takeda.: "The role of intestinal bacteria in the metabolism of aldosterone in man." Hormone Res. 29. 147-150 (1988)▼

[Publications] R.Takeda, I.Miyamori, T.Matsubara.: "Effects of mineralocorticoids on angiotensin II generation in vascular bed. The Adrenal and Hypertension." Eds F.Mantero and R.Takeda. Raven Press. 135-143 (1988)▼

[Publications] Hideo Koshida, Isamu Miyamori, Ryuichiro Soma, Takao Matsubara, Masatoshi Ikeda, Ryoyu Takeda, Shinichi Nakamura, Fumiyuki Kiuchi, Yoshisuke Suda.: "Mineralocorticoid and renal receptor binding activity of 21-deoxy aldosterone." Endocrinology, 1990.▼

[Publications] I.Miyamori, Y.Itoh, T.Matsubara, H.Koshida, R.Takeda.: "Cardiovascular and renal effects of endothelin in rabbits: Effects of endothelin antibody." Clinical Exp. Physiol & Pharmacol.▼

URL: https://kaken.nii.ac.jp/report/KAKENHI-PROJECT-63440091/634400911989kenkyu_seika_hokoku_

Published: 1993-03-25