to 200,000 for the heavier, and 50,000–70,000 for the lighter polysome fraction. A molecular weight of 200,000 has been estimated for the subunit of myosin by chemical techniques[19, 20] and estimates for the molecular weight of actin[21, 22] are in close agreement with the calculated polypeptide chain size that polysomes of fraction B should be capable of synthesizing. It is thus believed that both myosin and actin-like proteins of platelets are synthesized monocistronically[23].

Zusammenfassung. Zwei Klassen von Polyribosomen wurden von menschlichen Thrombozyten isoliert. Diese Polysome synthetisierten myosin- und actinähnliche Proteine in einem zellfreien System. Isolierung und Reinigung dieser Eiweisskörper zeigten deren Bildung in einer nativen Form an. Analyse der polysomalen Grösse indizierte die Synthese dieser Proteine an monocystronischen RNA-Molekülen.

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Prediction of Carcass Fat, Water and Lean Body Mass from Lee's 'Nutritive Ratio' in Rats with Hypothalamic Obesity[1]

Ventromedial hypothalamic lesions (VMNL) in mature rats result in hyperphagia and obesity[2]. Weanling rats with VMNL do not show hyperphagia and excessive weight gains[3–5] but have a higher carcass fat content than their controls[6, 7].

It has been suggested that the obesity status of a rat may be assessed by dividing the cube root of the body weight by the naso-anal length. Lee[8] referred to this value as 'nutritive ratio' and considered values above 300 as indicating obesity. Several authors have used this expression to gauge hypothalamic obesity in rats with VMN lesions[9, 10, 4, 5, 11].

For the preliminary screening of weanling VMNL rats in our laboratories the above index, also referred to as 'Lee Index' by Szentagothai et al.[10], has been used extensively prior to histological verification of the hypothalamic lesions and before performing costly and time-consuming endocrine-metabolic analyses[12, 7, 13–16].

Analysis of our data accumulated during the last 5 years show that high correlations exist between the 'Lee Index' and carcass fat, carcass water and lean body mass in both weanling and mature rats with VMNL.

Weanling male and female rats received bilateral electrolytic VMN lesions sparing the median eminence. Sham-operated rats served as controls. The coordinates had been previously established[17]. The lesions were produced with a stereotaxic instrument using 0.25 mm stainless steel electrodes that were spar-varnish-coated and bared at the tip. An anodal current of 1.5 mA was allowed to flow for 10 sec. The animals were maintained under standard conditions and killed 2, 3, 4 and 7 weeks postoperatively. The brains were treated in a standard manner[18] and the lesions were localized using the atlas of De Groot[19]. Rats with asymmetrical lesions or with lesions exceeding beyond the ventral border of the hypothalamus were excluded from statistical analysis. Mature rats (229–251 g body weight) were treated similarly and killed 5 weeks after the operation. In the latter rats, histological verification of the hypothalamic lesions was not deemed necessary because mature rats fail to become obese when lesions are outside the VMN or are asymmetrical.

Carcass fat and water were determined according to a modification of a previously described method[20]. Lean body mass was computed from the above 2 parameters. Coefficients of correlation (r) and linear regression lines (y') were computed and are tabulated in the Table.

The Table shows that the 'Lee Index' correlates well with and allows a fairly accurate prediction of carcass fat, water and lean body mass in rats with hypothalamic obesity. Sham-operated controls, however, show poor and, except for carcass water, insignificant correlations.

The fact that significant correlations exist only in rats with hypothalamic lesions and not in controls is likely

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Correlation coefficients and linear regression line equations for rats with ventromedial hypothalamic lesions and of their sham-operated controls

Treatment	n	Carcass component	$r \pm \mathrm{SE}r^{a}$	$P_r <^{b}$	$y'^{d} = \frac{r\,\mathrm{SD}y^{e}}{\mathrm{SD}x}(x^{f} - \bar{x}) + \bar{y}^{g}$	$\pm \mathrm{SEE}^{h}$
VMN	127	Fat % wet body wt.	+0.73 ± 0.041	0.001	$y = 0.46(x - 329.9) + 26.5$	± 9.59
	127	Water % wet body wt.	−0.77 ± 0.036	0.001	$y = -0.39(x - 329.9) + 54.6$	± 7.16
	127	Lean body mass	−0.73 ± 0.041	0.001	$y = -0.12(x - 329.9) + 19.0$	± 2.52
CON	105	Fat % wet body wt.	−0.02 ± 0.098	n.s.	$y = -0.008(x - 304.3) + 9.4$	± 3.55
	105	Water % wet body wt.	+0.29 ± 0.090	0.01	$y = 0.08(x - 304.3) + 66.9$	± 2.53
	105	Lean body mass	−0.11 ± 0.097	n.s.	$y = -0.02(x - 304.3) + 24.2$	± 1.79

[a] Coefficient of correlation ± standard error of r. [b] P value of r. [d] Predicted y = carcass fat, water and lean body mass, respectively. [e] Standard deviation of y/standard deviation of x. [f] Value of LEE Index minus mean of x. [g] Mean of y. [h] Standard error of estimate of linear regression line equation. 'Nutritive ratio' $= \frac{\sqrt[3]{\text{Body wt.}}}{\text{Naso-anal length (mm)}} \times 1000$.

related to the 'abnormal' type of obesity that has been described in weanling VMNL rats[13,7,15,21–23,16]. This metabolic type of obesity is characterized by increased plasma insulin and triglyceride levels, decreased pituitary and plasma GH levels and increased glucose-U-C^{14} oxidation, decreased palmitate-1-C^{14} oxidation, and increased incorporation of both glucose and palmitate into adipose tissue.

The data show that from simple body weight and length measurements, carcass fat, carcass water and lean body mass may be computed and predicted in rats with hypothalamic obesity. This is of value in the preliminary screening of VMNL rats prior to time-consuming histological verification of the lesions and before costly endocrine-metabolic analyses are performed.

Zusammenfassung. Verschiedene Untersuchungen im Zusammenhang mit Fettsucht wurden bei Ratten mit hypothalamischer Fettsucht, erzeugt durch Läsionen im Bereich des ventromedialen Teiles des Hypothalamus durchgeführt. Es konnten wertvolle Korrelationen zwischen Körperfett, Körperwasser und fettfreier Körpermasse errechnet werden.

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Sex Differences in Level of a Vasoactive Plasma Protein and Changes during Pregnancy

The isolated perfused vein of the rabbit ear constricts in response to human plasma and the activity of plasma is associated with a protein of mol. wt. 90,000–100,000. Similar activity is found in some Cohn fractions of human plasma protein, the most active of which is fraction III-O. Both plasma and venoconstrictor Cohn fractions cause hypotension when given i.v. and increased blood flow when given by intra-arterial injection in the dog and would thus appear to cause vasodilatation in vivo[1]. Fraction III-O provides a stable, reproducible standard preparation against which the venoconstrictor activity of various plasmas may be compared using the isolated perfused vein of the rabbit ear as the assay organ[2]. This paper reports the levels of venoconstrictor activity in the plasma of a group of ostensibly normal individuals of both sexes and compares the findings with those from a group of women in the second trimester of pregnancy – a situation in which there is vasodilatation and often a reduction in blood pressure below normal levels.

Blood was collected into heparin and plasma separated within 3 h. The plasma was stored at −20 °C for 24 h, then thawed and allowed to stand at room temperature for 1 h. This method was adopted as standard since it permitted the depletion of the kininogen of the plasma by activation of endogenous kallikrein and the destruction by kininase in plasma of the kinins thus formed. The venoconstrictor activity in plasma was estimated by 4-point assay using III-O solution as standard. Results were expressed in terms of units/ml, 1 unit being arbitrarily defined as the activity of 1 mg III-O standard. Since the concentration of protein in a sample can vary with the mode of collection of blood, with nutritional status of the donor and with other circumstances, activities have been expressed in terms of venoconstrictor activity per mg protein estimated by a quantitative biuret method[3].

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