

# **Acta endocrinologica**

**Supplementum 155**

## **ADVANCE ABSTRACTS OF SHORT PAPERS**

**Eight Acta endocrinologica Congress  
Copenhagen  
July 4-8, 1971**

**PERIODICA . COPENHAGEN 1971**

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# ADVANCE ABSTRACTS OF SHORT PAPERS

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208. *Thorkild Friis, Inge Hindberg and O. Helmer Sørensen*: The renal effects of calcitonin in patients with hypoparathyroidism.
209. *B. E. C. Nordin and M. Peacock*: The role of the kidney in the regulation of plasma calcium.
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217. *Ib Transbøl, J. R. Gill, Jr., M. Lifschitz, C. S. Delea and F. C. Bartter*: Intestinal absorption and renal excretion of calcium in metabolic acidosis and alkalosis.
218. *Ib Hornum and Ib Transbøl*: Escape of magnesium from the renal action of parathyroid hormone in hyperparathyroidism.
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220. *D. H. Copp, B. Rafferty, C. J. Robinson and J. A. Parsons*: Effect of calcitonin on the response to parathyroid hormone.

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230. *E. Otto Höhn*: Hormones and seasonal pelage change in the varying hare (*Lepus americanus*).
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232. *M. Hyyppä, P. Lehtinen and U. K. Rinne*: Effect of L-DOPA on the regulation mechanisms of reproductive functions in the rat.
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235. *Ch. Seyfried, H .G. Kraft and H. Kieser*: Oestrogenic potency and storage in body fat of a new isoflavenedioldicyclopentylether.
236. *Ilse von Berswordt-Wallrabe and Dietrich Flaskamp*: Inhibition of lactation by Estrovis (Quinestrol).

**Brain-Thyroid Relationships and Regulation  
of Thyroid Function**

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Abstract No. 1-18

II. Medizinische Klinik, Universität München

SEPARATE DETERMINATION OF TOTAL T<sub>3</sub> AND T<sub>4</sub>  
IN SERUM BY A SEMIAUTOMATICAL METHOD

T. Ruhl, J. Habermann, K. Horn and P. C. Scriba\*

*Method:* Iodothyronines are separated from serum proteins (2.5 ml) with 1 ml AG 50W-X4, minus 400 mesh, H<sup>+</sup>-form, yield > 95 %. T<sub>3</sub> and T<sub>4</sub> are completely separated on 4 g Sephadex G-25 superfine with 0.05 M potassiumphosphate buffer pH 11.9. T<sub>3</sub> and T<sub>4</sub> are eluted each in 40 ml (yield 100 %). From these eluates T<sub>3</sub> and T<sub>4</sub> are separately absorbed under continuous acidification (0.1 N HCl) on 1 ml Bio-Rex 70, 50-100 mesh, H<sup>+</sup>-form, and finally eluted by 5 ml 5 N NH<sub>4</sub>OH (yield > 95 %). The eluates are dried down under recycling N<sub>2</sub>. The residues are directly subjected to an automated competitive protein binding analysis for T<sub>3</sub>, resp. T<sub>4</sub> or are dissolved in 1 ml 1 N NaOH with 10 mg activated Zn for an automated microchemical iodine determination (Z. Anal. Chem. 252, 267 (1970)). – The complete chromatography is performed in a closed system of 3 consecutive columns, which allows the parallel automatical analysis of 25 samples within less than 8 h.

*Results:* Recovery for the complete procedure: Added inactive T<sub>3</sub> = 87 %, T<sub>3</sub>-<sup>125</sup>I = 88.6 %. *Precision:* Variation coefficient for T<sub>3</sub>-<sup>127</sup>I = 6.5 %, for T<sub>4</sub>-<sup>127</sup>I = 2.7 %

$$(\text{var. coeff.} = \frac{\text{SD}}{\text{mean}} \times 100).$$

These results from the microchemical iodine determination are compared with the data from competitive protein binding assay as final analytical step. Data from patients with autonomous adenoma will be presented.

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