sorptive capacity, the absorptive capacity tended to decrease in vagotomized and stimulated groups, compared with the normals.

6. On the autoradiogram of tracheo and bronchial wall, introduction of RI into cells in tracheo and bronchial wall was comparatively clear. The autoradiogram and electronmicroscopic findings showed a character of the absorptive capacity.

VIII. Kidney

A Basic Study of Radioisotope Renogram by Autoradiography

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Radioisotope Renography is now a routine individual kidney function test. But each segment of the renogram is not explained clearly. As autoradiographic study gave us a direct view on the distribution of the $^{131}$I-Hippuran, we tried to analyze each segment by this method.

For this study, we used 23 rabbits weighing about 2kg and 13 male mice which were 3 month old and weighed about 35 gram.

On macroradiography we used the freezing method according to Ulberg and Matsuoka, and on microautoradiography stripping method using the films, Sakura NRMI.

In the macroradioautogram of rabbit kidney and whole mice body which is taken within the time corresponding to the segment $b$, Hippuran is mostly distributed in the renal cortex and not in the urinary bladder. In the time corresponding to the segment $c$, Hippuran gradually shifts to the renal medulla and the urinary bladder.

On rabbits within a short time such as 20 second after injection, $^{131}$I-Hippuran shows the same distribution as $^{131}$I-PVP which does not excrete from the kidney. It might be supposed that segment a represents renal circulation or vascularity chiefly.

A Clinical Study on the Correlation between the Radioisotope Renogram, Renal Function Tests and Renovascular Diseases

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Among the radioisotope renograms on 250 patients recorded so far at this hospital, 165 tracings on the patients with medical kidney diseases (hypertension, nephritis etc.) were analyzed.

The patients were given 300 ml of tap water by mouth. Thirty minutes later 0.5 microcuries/kg. of $^{131}$I-Hippuran was injected intravenously and the renogram was taken in the sitting position.

The 165 renograms were divided into 5 types. The patients whose renograms were of the normal type (Type N) in which the gradient of the β-segment ($\tan \theta$) was larger than 1.0 and the half life value (Ht) was less than 6 minutes showed normal PSP, PRF and GFR. The delayed excretion type (Type MIN) in which $\tan \theta$ was larger than 1.0 and Ht was...