

Goncalves RP, GC Bennet, CP Leblond. Fate of ³H-ribose in the rat as detected by autoradiography. *Anat Rec* 1969;165:543-557.

Light and electron microscopic radioautographs of the tissues of young rats which were sacrificed at various times after a single ³H-ribose injection revealed a wide distribution of the label.

Nuclear reactions were seen over hepatocytes and other cell types. After removal of RNA by treatment with RNase, but was absent after DNase treatment, indicating uptake into newly-synthesized DNA. Hence, ribose may be taken up into *nucleic acids* undergoing synthesis.

In cells of liver and cartilage as well as in some muscle fibers, moderate reaction appeared over glycogen areas. Removal of the label by salivary amylase confirmed its uptake into glycogen.

In mucous and other secretory cells, amylase resistant radiographic reactions appeared over the Golgi region and later over secretion products. Presumably the label was incorporated into the glycoprotein moieties of these secretions.

Many, if not all, cells in the body appear to be able to utilize free exogenous ribose. It is presumed that ribose is first phosphorylated and then either incorporated into the RNA and DNA being synthesized in the nucleus or converted into the glucose or fructose derivatives used for glycogen and glycoprotein synthesis in the cytoplasm. That these pathways may play a significant physiological role is suggested by the recent finding of free ribose in the blood.

