

Tissue Culture and Electron Microscopic Study on Regeneration of Liver with Liv.52

Prasad, G.C.,

Department of Shalya and Surg.. Res. Lab.,
Institute of Medicine Sciences, Banaras Hindu University, Varansai, India.

[*Abstracted from*: The First International Congress on Cell Biology, September 5-10, 1976, Boston]

In *in vitro* studies, the degenerated liver of adult mice (produced by Carbon tetrachloride and Alcohol) was grown in organo type culture *in vitro* in a synthetic medium for six days. In addition, these tissues were also grown *in vitro* in the medium containing Liv.52 (in the dose of 15 µgm/ml) for a similar period. Tissues from both the groups were harvested at the end of 2, 4 and 6 days after culture and were then subjected to histological and histochemical studies. The culture media was analysed biochemically for glucose, alkaline phosphatase, bilirubin, SGOT and SGPT. In addition to the cultivation of animal liver tissues, some cirrhotic liver tissue was also grown in the similar medium. It has been observed that liver tissue could be successfully grown *in vitro* in a chemically-defined medium for 6 days. The addition of Liv.52 to the culture medium stimulated the liver function, showing some signs of regeneration. The fibrotic changes of the cirrhotic liver started disappearing. Apart from this culture study, the sequence of regeneration and the probable site of interaction of this drug in the liver was studied by using an Electron Microscope. It has been observed that there was absence of mitochondria and ribosomes along with rough endoplasmic reticulum in the damaged liver cells. In addition serration of the nucleus, and extra-cellular collagen fibrils formation could be seen. Those animals treated with Liv.52 revealed appearance of mitochondria, regeneration of rough endoplasmic reticulum along with ribosomes. The collagen fibres started disappearing and the nucleus returned to its normal appearance.