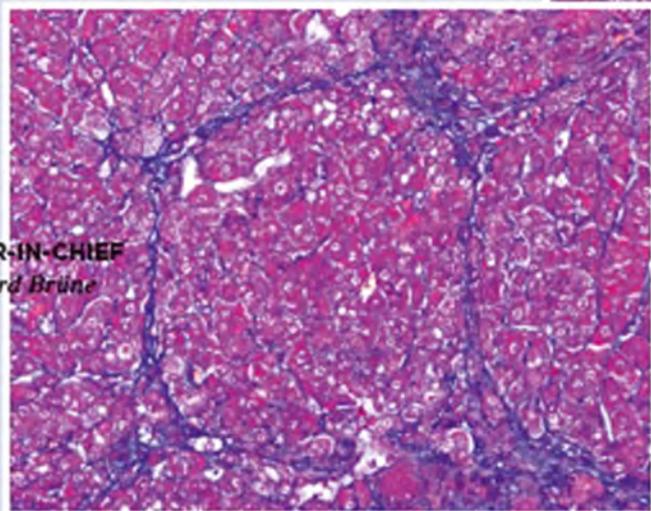
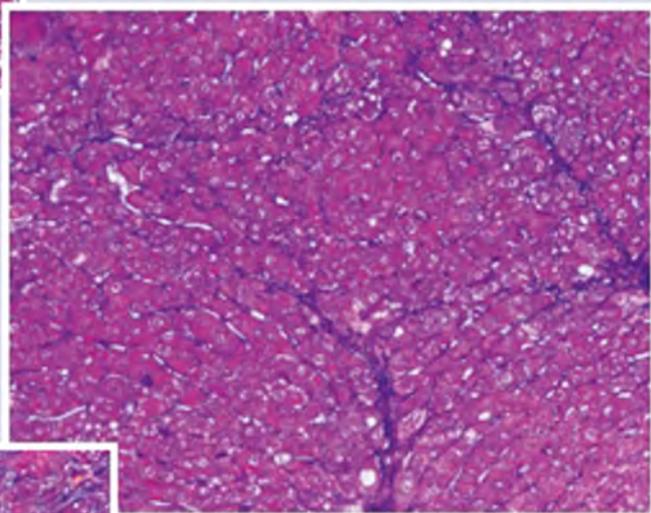
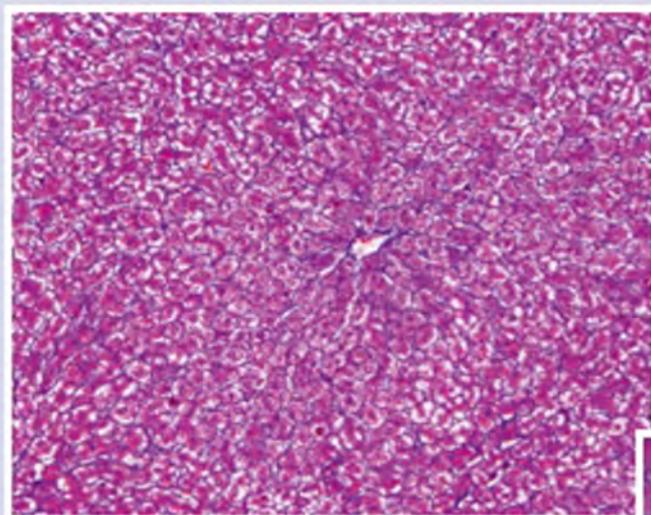


BIOLOGICAL CHEMISTRY



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BIOLOGICAL CHEMISTRY

Founded in 1877 by Felix Hoppe-Seyler as
Zeitschrift für Physiologische Chemie

Felix Hoppe-Seyler (1825–1895) was a pioneer of biochemistry, remembered not only for his discovery of hemoglobin and his contributions to the chemical characterization of many other biological compounds and processes but also for having been the mentor of Friedrich Miescher and Albrecht Kossel. In his preface to the first issue of *Zeitschrift für Physiologische Chemie*, Felix Hoppe-Seyler coined the term *Biochemistry* ('Biochemie') for the then newly emerging discipline.

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RESPONSIBLE EDITOR(S) Professor Dr. Bernhard Brüne, Goethe-University Frankfurt, Faculty of Medicine, Biochemistry I, Theodor-Stern-Kai 7, D-60590 Frankfurt/Main, Germany, Tel.: +49-69-6301 7424, Email: B.Bruene@biochem.uni-frankfurt.de

JOURNAL MANAGER Dr. Torsten Krüger, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany, Tel.: +49 (0)30 260 05-176, Fax: +49 (0)30 260 05-298, Email: biol.chem.editorial@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Claudia Neumann, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany. Tel.: +49 (0)30 260 05-226, Fax: +49 (0)30 260 05-264, Email: anzeigen@degruyter.com

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COVER ILLUSTRATION

On the front cover, Masson's trichrome staining for collagen in paraffin sections of rat liver demonstrating pathogenesis of hepatic fibrosis is depicted. Liver injury was induced by serial intraperitoneal administrations of *N*-nitrosodimethylamine (NDMA) in doses of 1 mg/100 g body weight on three consecutive days of every week over a period of three weeks. A rapid increase in collagen content was noticed with constant raise occurring from day 7 to 21 (upper image: before NDMA treatment). On day 14, initiation of fibrosis and deposition of collagen fibers could be observed (exemplified by the middle image). By day 21, deposition of thick collagen fibers with marked hepatic fibrosis and early cirrhosis was present (lower image). Joseph George used this rat model of liver injury to examine various biochemical parameters during the development of liver fibrosis and cirrhosis, e.g. serum and liver selenium levels, total glutathione content and glutathione peroxidase activity, as well as serum interleukin-6 and transforming growth factor- β 1 levels, to evaluate oxidative stress (see the article on pp. 499–509 in this issue). The results suggest that decreased selenium and glutathione peroxidase contribute to the impairment of cellular antioxidant defense, which in turn results in oxidative stress and trigger pathogenesis of hepatic fibrosis. The study further demonstrates that Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) with selenium hydride generation is a reliable and sensitive method for determination of selenium in biological samples.

