viscosity xanthan gum is more desirable, but for the others it can be converted to a higher viscosity by standard methods.

TITLE: ψ-Emulsans
INVENTORS: David Gutnick, Ramat Aviv, Eugene Rosenberg, Raana, Igal Belsky, Ramat Aviv, and Zosim Zinida, Kefar Sava, IS
ASSIGNEES: Petroleum Fermentations N.V., Netherlands Antilles
FILING AND ISSUING DATA:
U.S. Patent No.: 4,380,504
Date Issued: April 19, 1983

The patent protects emulsifiers produced by *Acinetobacter sp.* ATCC 31012 which "on a weight for weight basis, are probably the most efficient emulsifiers discovered." They work in both fresh and salt water, clean up oil spills, the insides of engines, the holds of oil tankers, and other hydrocarbon messes in hard to reach places, and are useful in enhanced oil recovery.

The extracellular, protein-associated lipopolysaccharides produced by 31012 have been named emulsans by the inventors. They are, for example, able to remove oil from limestone. Crushed limestone impregnated with crude oil was put in a flask with a buffer solution. α-emulsan, one of the two classes of emulsans described in the patent, was added to the flask and shaken. In the most effective concentration of α-emulsan, 98% of the crude oil was removed.

TITLE: Process for the Preparation of Enzymes
INVENTOR: Ralf Lundell, Vänttä, FI
ASSIGNEES: Rintekno Oy, Kotkapolkkku, and G. A. Serlachius Oy, Mänttä, FI
FILING & ISSUING DATA:
PCT Publication No.: WO 83/01458
PCT Publication Date: April 28, 1983
Priority Country: FI
Priority Date: October 26, 1981

The patent protects a continuous aerobic fermentation process for preparing enzymes from the cell masses of mycelium-forming microfungi of the class Fungi imperfecti such as *Paealonyces variotti.* The continuous process is able to produce all the enzymes that the traditional batch process produces with the same fungi.

The cells are grown in one medium, washed, and then transferred to an enzyme-promoting medium. Immediately after this treatment, they begin excreting enzymes and continue for dozens of hours. Increasing the concentration of microfungus will accelerate the enzyme production. The cells can be recycled into a single cell protein factory.

Because the cell-growing step is separated from the enzyme-producing step, the continuous process can produce larger quantities of enzymes more quickly than the batch process: the separate media allow cell reproduction and enzyme production to go on continuously and under better conditions for each. The higher concentration of enzymes in the continuous process makes the after-treatment of the enzymes easier than in the batch method.

ASSAYS

TITLE: Immunometric Assays Using Monoclonal Antibodies
INVENTORS: Gary David, La Jolla, and Howard Greene, Carlsbad, CA, US
ASSIGNEE: Hybritech, Inc., La Jolla, CA, US
FILING AND ISSUING DATA:
U.S. Patent No.: 4,376,110
Date Issued: March 8, 1983

The patent protects a non-competitive immunoassay using two different monoclonal antibodies, one radioactively labelled and the other attached to an insoluble matrix. When the antibodies react with an antigen, a "sandwich" is formed and the radioactive antibody is removed from the solution. The sandwich eliminates a washing step, speeding up the assay.

TITLE: Heterogenous Chemiluminescent Immunoassays Utilizing Metallo Porphyrin Tag
INVENTORS: Peter Forgione and William Henderson, Jr., Stanford, CT, US
ASSIGNEE: Allied Corporation, Morris Township, Morris County, NJ, US
FILING AND ISSUING DATA:
U.S. Patent No.: 4,375,972
Date Issued: March 8, 1983

The patent protects an enzyme-catalyzed monitoring system employing a conjugate consisting of an antigen or an antibody tagged with metallo porphyrin. It is a fast, sensitive, long lasting, objective, readily available, relatively low cost, and universally reactive immunoassay employing simple instrumentation.

TITLE: Heterogenous Chemiluminescent Specific Binding Assay
INVENTORS: Robert Boguslaski, Elkhart, IN, Robert Carrico, Bremen, IN, James Christner, Ann Arbor, MI, US
ASSIGNEE: Miles Laboratories, Inc., Elkhart, IN, US
FILING AND ISSUING DATA:
U.S. Patent No.: 4,380,580
Date Issued: April 19, 1983

The patent protects an assay used to detect ligands in liquid. A chemiluminescent reactant bound to a specific ligand-binding substance amplifies the response. The assay uses neither radioactive materials nor modified enzymes.

*Country Codes:
DK = Denmark
FI = Finland
IS = Israel
JP = Japan
SW = Sweden
US = United States

Patent information in this department was compiled from the *Official Gazette of the United States Patent and Trademark Office* and the *PCT Gazette*, which publishes abstracts of international patent applications filed through the World Intellectual Property Organization (WIPO) in Geneva, Switzerland.

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Copies of patents listed in the *PCT Gazette* can be obtained from the Foreign Patents Section, U.S. Patent Office, Box 9, Washington, DC 20231. The documents may also be obtained from Pergamon International Information Corporation, 1340 Old Chain Bridge Rd., McLean, VA 22101, and from WIPO, 34, chemin des Colombettes CH-1211, Geneva 20 Switzerland.