



## Summaries of UK Patent Applications

### **Preparing Glucans. GB 2241705A.**

Filed 6 March 1990, published 11 September 1991.

Applicant — Shell Internationale Research Maatschappij B.V., The Hague.

A process for preparing a cyclosophoran (a cyclic glucan) comprises cultivating a suitable mutant strain of a micro-organism by introduction of a transposon into the parent strain. The parent strain is capable of producing both cyclosophoran and extracellular polysaccharide whereas the mutant strain can only produce the former.

Suitable parent strains include *Agrobacterium* and *Rhizobium*.

### **Prevention of the Drift of Dust. GB 2243836A.**

Filed 11 May 1990, published 13 November 1991.

Applicants — Ajinomoto Co., Inc., Tokyo and Perfeck Co., Inc., Tokyo.

A composition is revealed containing glucomannan as a principal component and also a method involving a hydrated glucomannan, both for preventing dust drifting during the breakup of a building.

### **Conjugate Compounds of Polymers with Other Organic Molecular Entities. GB 2244491A.**

Filed 2 April 1990, published 4 December 1991.

Applicants — E.H. Schacht, Staden, Belgium; R. Duncan, University of Keele, UK and J. Loccufer, Ghent, Belgium.

Macromolecules can be selectively and covalently coupled to other organic molecules to make conjugate compounds using a reaction between a thiol-specific reactive disulphide group (preferably a sulphenyl thiocarbonate group) on one of the molecular species and a sulphydryl or thiol group on the other. This method is particularly applicable to the selective coupling of bio-active molecules to polymers which can act as relatively inert carriers in biological systems (e.g. for use as drug delivery agents). The method further enables *inter alia* a 1:1 coupling to be achieved between polymeric drug carriers and proteins or polypeptides (including antibodies or antibody fragments).

### **Extracellular Polymer. GB 2244998A.**

Filed 14 September 1990, published 18 December 1991.

Applicant — Laboratories Om SA, Meyrin, Switzerland.

An extracellular exopolymer (essentially a polysaccharide but possibly comprising a protein fraction) endowed with immunomodulating properties is prepared by culturing the *Bifidobacterium infantis longum* strain deposited at the Institut Pasteur under N° I-885 in a suitable medium under anaerobic conditions. After the micro-organisms are discarded from the culture medium, the exopolymer thus produced is isolated, concentrated and then precipitated by adding an organic solvent; finally the precipitate is lyophilized.

The resulting exopolymer possesses an activity on cellular as well as on humoral immunity and could thus be used as an immunomodulating agent in any potential therapeutic application.

### **Drilling Fluid Additive. GB 2245579A.**

Filed 29 May 1991, published 8 January 1992.

Applicant — Baker Hughes Incorporated, Houston, USA.

A fluid for the drilling, workover or completion of a subterranean well comprises an aqueous base, the browning reaction product of a carbohydrate and a cation. Browning polymers may be formed by heating an alkaline solution of the carbohydrate, and the reaction product may be reacted with a cationic base. Inversion of non-reducing sugars may be first effected on selected carbohydrates with the inversion catalyzing the browning reaction.

### **Mixtures of Low Molecular Weight Polysaccharides and their Preparation and Use. GB 2245898A.**

Filed 24 June 1991, published 15 January 1992.

Applicant — Rhône-Poulenc Rorer SA, Antony, France.

The invention provides mixtures of sulphated  $\bar{M}_w$  lower than that of heparin. Between 9% and 20% of the polysaccharide chains in the mixture have a molecular weight less than 2000 and between 5% and 20% a molecular weight greater than 8000. The  $\bar{M}_w:\bar{M}_n$  ratio is between 1.3 and 1.6.

A process for preparing these mixtures comprises converting heparin to a long chain quaternary ammonium salt, esterifying to a degree of esterification between 9.5% and 14% and then depolymerising the ester.

**Cornea-protecting Compositions.** GB 2246353A.  
Filed 23 July 1990, published 29 January 1992.  
Applicant — Mezhotraslevoi Nauchno-Tekhnichesky Komplex 'Mikrokhirurgia Glaza', Moscow, Russia.  
Cornea-protecting compositions for use in ophthalmic surgery are disclosed, such as for the extraction of cataracts of assorted aetiology, for implanting an intraocular lens and for keratoplasty. The compositions comprise methyl cellulose of which the preferred form is Tylose (RTM). They are easily eliminated and do not cause increase intraocular pressure.

**Amylose Granule and its Preparation.** GB 2247242A.  
Filed 25 July 1991, published 26 February 1992.  
Applicant — Kabushiki Kaisha Hayashibara Seibutsu Kagaku Kenkyujo, Okayama, Japan.  
Novel amylose granules advantageously used in the fields of food products, pharmaceuticals and cosmetics exist in an approximately globular shape or in a conjugation form consisting of two or more granules linked together. Their diameter (or major axis) is 2–10  $\mu\text{m}$ , they have an  $\overline{M}_n$  of 4000–7000 (as measured by gel permeation chromatography), an  $\overline{M}_w/\overline{M}_n$  ratio of about 1.4–1.7 and a B type form of starch on powder X-ray diffraction analysis.

The granules may be prepared by allowing cyclomaltodextrin glucanotransferase (EC 2.4.1.19) to act on an aqueous solution containing a cyclodextrin or starch. Examples of sources of the enzyme are *Bacillus stearothermophilus* and *Bacillus macerans*.

**Nasal Compositions Containing Parathyroid Hormones.** GB 2248550A.

Filed 19 September 1992, published 15 April 1992.  
Applicant — Sandoz Ltd., Basle, Switzerland.  
A novel means of administration of human parathyroid hormones is described. Preferred carriers for nasal administration are celluloses coated with a fatty ester. Other polysaccharides are also mentioned as possible carriers.

**A Process for Producing an Aqueous Solution of Sodium Hyaluronate.** GB 2249315A.

Filed 23 October 1991, published 6 May 1992.  
Applicant — Chisso Corporation, Osaka, Japan.  
A process for producing an aqueous solution of sodium hyaluronate of high purity is described. The fermentation broth is treated with active carbon in the presence of sodium chloride, optionally after having treated the broth by ultrafiltration, and then treating the active carbon-treated broth by ultrafiltration.

**Aqueous Polysaccharide Compositions and Their Use.** GB2250761A.

Filed 6 December 1990, published 17 June 1992.  
Applicant — Shell Internationale Research, The Hague, The Netherlands.  
The use of alcohols (particularly methanol and glycerol) to alter (raise) the transition temperature of microbial polysaccharides is described. The examples relate particularly to succinoglycan. The use of alcohols as opposed to salts allows the transition temperature to be varied independently of the density of the composition.

**Adhesive.** GB2251438A.

Filed 6 January 1992, published 8 July 1992.  
Applicant — Courtaulds Fibres Ltd., Coventry, United Kingdom.  
A composition consisting of a very dry mixture (moisture content less than 1%) of a cellulose derivative or starch with a gas producing formulation when mixed with water is described. An example would be hydroxypropylmethyl cellulose plus citric acid and a mixture of sodium carbonate and bicarbonate. The composition can be pressed to give a tablet which, when added to water, gives rapid dissolution and viscosity build up. A low moisture content is necessary to prevent premature reactivity of the carbonate and acid.

**Protective Coating Formulation.** GB 2253401A.

Filed 21 February 1992, published 9 September 1992.  
Applicant — Gramos Chemicals International Ltd., London, United Kingdom.  
A wound dressing for heavily exuding wounds is described. This consists of an open-celled hydrophilic foam e.g. a polyether polyurethane foam. For use on bleeding wounds and/or to improve the adsorptive capacity the foam itself may be impregnated with alginates which act both as a haemostat and as an adsorption improver.