

# Gluten in pills: a hazard for patients with celiac disease

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It has recently been recognized that many pharmaceutical products contain gluten. Patients with celiac disease are at risk of acute illness if they are treated with such products. This paper lists the products available in Canada, according to the "Compendium of Pharmaceuticals and Specialties, 1985", that contain gluten and the Canadian manufacturers who stated that they do not use gluten as an excipient.

On s'est aperçu dernièrement que beaucoup de produits pharmaceutiques contiennent du gluten, dont l'ingestion présente un danger d'exacerbation aiguë pour les sujets souffrant de maladie coeliaque. Liste des produits disponibles au Canada, selon le "Compendium des produits et spécialités pharmaceutiques, 1985" qui contiennent du gluten, et des fabricants canadiens qui déclarent ne pas l'utiliser comme excipient.

The avoidance of gluten is the cornerstone of celiac disease management.<sup>1</sup> It has come to our attention that wheat products may be among the excipients used in the manufacture of pharmaceutical products. In this paper we list the preparations

available in Canada that are known to contain gluten and the Canadian manufacturers who state that they never use wheat or wheat products as excipients. A less complete report has appeared in the pharmaceutical literature.<sup>2</sup>

## Methods and results

One of us (C.M.E.K.), during the summer of 1984, contacted all Canadian pharmaceutical manufacturers by letter, asking them whether their products contained gluten or were gluten-free. Products that contain gluten are listed in Table I, and manufacturers who stated that they do not use wheat products as excipients are listed in Table II. The lists are not exhaustive since some manufacturers did not reply to the inquiry.

## Discussion

Celiac disease is characterized by a loss of the villus architecture of the small bowel mucosa. The surface epithelium changes from columnar to cuboidal, crypt hyperplasia is present, and mononuclear cell infiltration in the lamina propria is increased. Improvement in the mucosal architecture after withdrawal of gluten is essential to the diagnosis of celiac disease.<sup>1</sup> The means by which gluten damages the small bowel mucosa is unknown. It may be that, because of a biochemical defect, perhaps an inborn error of metabolism, gluten is not digested and acts as a mucosal toxin.<sup>4</sup> Alternatively, an immunologic response to gluten may result in mucosal damage. Probably neither theory is correct.<sup>4</sup> Whatever the cause, the clinical manifestations can be absent altogether or can include severe life-threatening malabsorption of several nutrients. Why some patients with celiac disease suffer from severe diarrhea, some from folate- or iron-

deficiency anemia, some from losses of magnesium or calcium, and still others from protein-losing gastroenteropathy is not clear.

What is clear is that in treated patients the reintroduction of small amounts of gluten may rapidly induce histologic damage<sup>5,6</sup> and, in some instances, result in acute illness.<sup>7</sup> Therefore, the recognition that pharmaceutical preparations may contain gluten is of great concern both to patients and to doctors and dietitians who advise them.

Care should be taken that gluten-containing products are not prescribed for patients with celiac disease. More important, manufacturers should look to other sources for excipients or at least ensure that their products are comprehensively labelled, as has been suggested by others.<sup>8,9</sup>

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**Table I—Gluten content of selected\* pharmaceutical products<sup>3</sup>**

Product	Manufacturer†	Product	Manufacturer†
Adeflor	Upjohn	Nadostine	
Albamycin T	Upjohn	Oral tablets	Nadeau
Alophen	PD	Vaginal cream	Nadeau
Antistine	Ciba-Geigy	Neutralca-S	Desbergers
Benzedrine, 5 and 10 mg	SK & F	Nobesine-75	Nadeau
Biocine	Nadeau	Oestrilin, 0.3, 0.625, 1.25 and 2.5 mg	Desbergers
Combid	SK & F	Oestrilin	
Contac C	Menley & James	With methyltestosterone	Desbergers
Cordex Forte Improved	Upjohn	With phenobarbital	Desbergers
Cortef, 10 and 20 mg	Upjohn	With phenobarbital and methyltestosterone	Desbergers
Coryphen, 325 and 650 mg	Rougier	Opium, Camphor & Tannin	Desbergers
Coryphen-Codeine, 325 and 650 mg	Rougier	Ornade capsules	SK & F
Cytomel, 5 and 25 µg	SK & F	Ornade-A.F. capsules	SK & F
Dalacin C	Upjohn	Ovoquinol	Nadeau
Darbid	SK & F	Parnate	SK & F
Debiline	Nadeau	Prostin E <sub>2</sub>	Upjohn
Debiline-“H”	Nadeau	Provera, 5 and 100 mg	Upjohn
Deltasone, 5 and 50 mg	Upjohn	Roucol, 100 and 300 mg	Rougier
Dexedrine		Rouqualone “300”	Rougier
Tablets	SK & F	Sialor	Herdt & Charton
Capsules, 10 and 15 mg	SK & F	Sine-Off WD	Menley & James
Dyazide	SK & F	Stelabid	
Dyrenium, 50 and 100 mg	SK & F	Tablets, no. 1	SK & F
Fesofar, tablets and capsules	SK & F	Tablets, no. 2	SK & F
Gestamine	Nadeau	Forte	SK & F
Halcion, 0.125, 0.25 and 0.5 mg	Upjohn	Ultra	SK & F
Ibuprofen	Kenral	Stelazine, 1, 2, 5 and 10 mg	SK & F
Insomnal	Welcker-Lyster	Sulfarlem	Herdt & Charton
Iodaminol, 10 and 30 mg	Desbergers	Sulfarlem-Choline	Herdt & Charton
Lipotrope	Rougier	Tagamet, 200, 300, 400 and 600 mg	SK & F
Loniten, 2.5, 5 and 10 mg	Upjohn	Trasicor, 20 and 40 mg	Ciba-Geigy
Marro-Dausse	Herdt & Charton	Tuss capsules	SK & F
Medrol, 2, 4 and 16 mg	Upjohn	Vasculine	Desbergers
Metaboline	Desbergers	Vontrol	SK & F
Motrin, 200, 300, 400 and 600 mg	Upjohn	Xanax, 0.25 and 0.5 mg	Upjohn
Nadopen-V	Nadeau	Yohimbine	Welcker-Lyster

\*Some manufacturers did not respond to the letter.

†PD = Parke, Davis Canada Inc.; SK & F = Smith, Kline & French Canada Ltd.

**Table II—Canadian manufacturers who stated that they do not use gluten as an excipient<sup>3</sup>**

Allen & Hanburys	Institut Armand-Frappier	Purdue Frederick Inc.
Anaquest	C.E. Jamieson & Co. (Dom.) Ltd.*	Reed & Carnrick
Apotex Inc.	Jan Distributing	Rhône-Poulenc Pharma Inc.
Astra Pharmaceuticals Canada Ltd.	Janssen Pharmaceutica Inc.	Richmond Pharmaceuticals Inc.
Ayerst Laboratories	K-Line Pharmaceuticals Ltd.	Rorer Canada Inc.
Beecham Laboratories Inc.	Laurentian Agencies	Sabex International (1980) Limited
Boehringer Ingelheim (Canada) Ltd.	Lederle Cyanamid Canada Inc.	Schering Canada Inc.
Ciba-Geigy Self Medication Products	Mallinckrodt Canada Inc.	G.D. Searle and Co. of Canada, Limited
Clark Laboratories Ltd.	McNeil Consumer Products Company	Servier Canada Inc.
Connaught Novo Ltd.	McNeil Pharmaceutical (Canada) Ltd.	Squibb Canada Inc.
CooperVision Inc.	Merck Frosst Canada Inc.	Sterling Drug Ltd.
Cowling & Braithwaite Company	Merrell Pharmaceuticals Inc.	Stiefel Canada Inc.
Dow Pharmaceuticals	Miles Laboratories Ltd.	Syntex Inc.
Du Pont Canada Inc.	Norwich-Eaton Inc.	Trans-Canada Dermapeutics Ltd.
Efamol Research Inc.	Novopharm Limited	Travenol Canada Inc.
Fisons Corporation Limited	Organon Canada Ltd./Ltée	USV Canada Inc.
Glaxo Laboratories	Ortho Pharmaceutical (Canada) Ltd.	Westwood Pharmaceuticals
Hoechst Canada Inc.	Pennwalt Inc.	Winnipeg Rh Institute Inc.
Hoffmann-LaRoche Limited	Pentagone Pharma Inc.	Winthrop Laboratories
ICI Pharma	Pfizer Canada Inc.	Wyeth Ltd.
Institut Rosell Inc.	Pharmacia (Canada) Inc.	

\*Only the wheat products contain gluten.