(11) Publication number:

0 185 528

**A3** 

(12)

## **EUROPEAN PATENT APPLICATION**

(21) Application number: 85309117.1

(51) Int. Cl.3: C 11 D 3/386

(22) Date of filing: 13.12.85

30 Priority: 14.12.84 US 681636

- Date of publication of application: 25.06.86 Bulletin 86/26
- (88) Date of deferred publication of search report: 26.08.87
- (84) Designated Contracting States:

  AT BE CH DE FR GB IT LI LU NL SE

- (1) Applicant: GENEX CORPORATION 110, Executive Boulevard Rockville Maryland 20852(US)
- (2) Inventor: Swann, Elliott Wayne 5392 Storm Drift Columbia Maryland 21045(US)
- 72) Inventor: Raymond, Lisa Grayson P.O. Box 616, 20 Boileau Court Middletown Maryland 21769(US)
- (72) Inventor: Willis, Roxcell Laurina 18906 Smoothstone Way Apt. 6 Gaithersburg Maryland 20879(US)
- (74) Representative: Holmes, Michael John Frank B. Dehn & Co. European Patent Attorneys Imperial House 15-19 Kingsway London, WC2B 6UZ, (GB)

(54) Enzymatic drain cleaning compositions.

<sup>57</sup> The present invention provides a composition for cleaning drains clogged with a hair-containing deposit which comprises: (a) a hair-disintegrating amount of a proteolytic enzyme, (b) a disulfide reducing agent, and (c) an alkali metal bisulfite compound in an amount sufficient to enhance the rate of activity of the enzyme, wherein the components (a), (b) and (c) are present as dispersions, separately or in combination, in water-soluble beads, each comprising a water-soluble polymer, such that the enzyme and reducing agent cannot substantially cross react prior to dissolution of the beads, and wherein the composition on dissolution provides a pH that enhances denaturation.



## **EUROPEAN SEARCH REPORT**

EP 85 30 9117

Category	Citation of document with indication, where appropriate, of relevant passages		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CI 4)	
A	EP-A-0 125 801  * Whole document	,	1,13-	C 11 D	3/386
A	 GB-A-1 417 840 * Claim 1; page		1		
A	US-A-3 506 582 * Claims 1,5; pa	(D.GERTSMAN) ge 7, lines 47-54	1		
-					
		·		TECHNICA SEARCHED	
				C 11 D	3/00
	•				
			i		
	The present search report has b	een drawn up for all claims	-		
Place of search		Date of completion of the search		Examiner	
	CATEGORY OF CITED DOCU rticularly relevant if taken alone rticularly relevant if combined wi cument of the same category chnological background n-written disclosure	F : earlier oa	principle unde		on n, or