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08/956,324 23 October 1997 (23.10.1997) US
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(54) Title: MULTIPLY-SUBSTITUTED PROTEASE VARIANT AND AMYLASE VARIANT-CONTAINING CLEANING COMPOSITIONS

(57) Abstract: The present invention relates to cleaning compositions comprising a protease variant. One cleaning composition comprises a protease variant including a substitution of an amino acid residue with another naturally occurring amino acid residue at an amino acid residue position corresponding to position 103 of *Bacillus amyloliquefaciens* subtilisin in combination with a substitution of an amino acid residue with another naturally occurring amino acid residue at one or more amino acid residue positions corresponding to positions 1, 3, 4, 8, 9, 10, 12, 13, 16, 17, 18, 19, 20, 21, 22, 24, 27, 33, 37, 38, 42, 43, 48, 55, 57, 58, 61, 62, 68, 72, 75, 76, 77, 78, 79, 86, 87, 89, 97, 98, 99, 101, 102, 104, 106, 107, 109, 111, 114, 116, 117, 119, 121, 123, 126, 128, 130, 131, 133, 134, 137, 140, 141, 142, 146, 147, 158, 159, 160, 166, 167, 170, 173, 174, 177, 181, 182, 183, 184, 185, 188, 192, 194, 198, 203, 204, 205, 206, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 222, 224, 227, 228, 230, 232, 236, 237, 238, 240, 242, 243, 244, 245, 246, 247, 248, 249, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 265, 268, 269, 270, 271, 272, 274 and 275 of *Bacillus amyloliquefaciens* subtilisin; wherein when said protease variant includes a substitution of amino acid residues at positions corresponding to positions 103 and 76, there is also a substitution of an amino acid residue at one or more amino acid residue positions other than amino acid residue positions corresponding to positions 27, 99, 101, 104, 107, 109, 123, 128, 166, 204, 206, 210, 216, 217, 218, 222, 260, 265 or 274 of *Bacillus amyloliquefaciens* subtilisin; and one or more cleaning adjunct materials. Another cleaning composition comprises a protease variant including a substitution of an amino acid residue with another naturally occurring amino acid residue at one or more amino acid residue positions corresponding to positions 62, 212, 230, 232, 252 and 257 of *Bacillus amyloliquefaciens* subtilisin; an amylase variant and one or more cleaning adjunct materials. Methods for using the cleaning compositions are also provided.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 C11D A61K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
1	X WO 97 32961 A (PROCTER & GAMBLE) 12 September 1997 (1997-09-12) Y the whole document ---	1,2, 6-22,45 1-25, 28-46
3	Y WO 96 23873 A (NOVONORDISK) 8 August 1996 (1996-08-08) cited in the application the whole document ---	1-25, 28-46
3	Y WO 95 26397 A (NOVONORDISK) 5 October 1995 (1995-10-05) cited in the application the whole document ---	1-25, 28-46
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
3	Y US 5 679 630 A (BAECK ANDRE ET AL) 21 October 1997 (1997-10-21) cited in the application claims examples table 1	1-25, 28-46
	Y -& WO 95 10591 A (PROCTER & GAMBLE) 20 April 1995 (1995-04-20) the whole document	1-25, 28-46
5	Y EP 0 405 901 A (UNILEVER) 2 January 1991 (1991-01-02) claims examples	1,3-15, 23-25, 28-37,46
5	Y WO 95 30010 A (PROCTER & GAMBLE) 9 November 1995 (1995-11-09) claims examples 7-94	1,4-25, 28-44,46
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	A page 138, line 47 -page 142, line 35	26,27
5	Y WO 96 28566 A (PROCTER & GAMBLE) 19 September 1996 (1996-09-19) claims examples 7-94	1,4-25, 28-44,46
	A page 121, paragraph 2 -page 126, paragraph 3	26,27