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$$\begin{bmatrix}
A - Q & -1 \\
 & 1
\end{bmatrix} P - L_1 - L_2 - L_3 - L_4 - \begin{bmatrix}
 & -1 \\
 & 2
\end{bmatrix} - X - \begin{bmatrix}
 & NH - B_2 \\
 & N - B_1
\end{bmatrix}$$
(1)

(57) Abstract

The present invention relates to compounds, compositions, and methods which are useful for the prevention and treatment of adverse health, skin, hair, and oral conditions. The compounds, compositions, and methods are also widely applicable for use in health, skin, hair, oral, beauty, and personal care applications. In particular, the present invention relates to compounds having structure (1): and the tautomers, acceptable salts, and biohydrolyzable amides, esters, and imides thereof, wherein A, Q, n, P, L1, L2, L3, L4, Z, X, B1 and B2 are defined herein.

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Documentati	on searched other than minimum documentation to the extent that su	ich documents are included in the	fields searched		
	ata base consulted during the international search (name of data base)	e and, where practical, search ter	rms used)		
	ENTS CONSIDERED TO BE RELEVANT		Deleverable delevable		
Category °	Citation of document, with indication, where appropriate, of the rele	vant passages	Relevant to claim No.		
А	TAKERKART, GEORGES ET AL: "Prepa and properties of organophilic tr macroinhibitors. Diamidinoalpha.,.omegadipheny polyethylene glycol" FEBS (FED. EUR. BIOCHEM. SOC.) LE (1974), 42(2), 214-17, XP0008703 page 214	ypsin lcarbamyl TT.	1-10		
А	EP 0 658 585 A (BEHRINGWERKE AG) 21 June 1995 (1995-06-21) claims; example 1		1-10		
А	US 4 556 560 A (BUCKINGHAM KENT W 3 December 1985 (1985-12-03) page 1-4)	10		
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L Fuiii	let documents are listed in the Continuation of Box O.	Y Patent family members a	aro notes ar samex.		
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2	5 January 2000	04/02/2000			
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	NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Sánchez Garc	ía, J.M.		

INTERNATIONAL SEARCH REPORT

Information on patent family members

In. ational Application No
PCT/US 99/05314

Patent document cited in search report		Publication date	Patent family member(s)		Publication date	
EP 0658585	A	21-06-1995	DE AU AU CA JP US	4342154 A 696532 B 8032794 A 2137748 A 7206927 A 5571844 A	14-06-1995 10-09-1998 15-06-1995 11-06-1995 08-08-1995 05-11-1996	
US 4556560	Α	03-12-1985	CA EP JP JP	1225026 A 0117613 A 2533471 B 59186919 A	04-08-1987 05-09-1984 11-09-1996 23-10-1984	