bottom is well prepared for the next stage of the wound healing process. At the same time, during a 24-hour exposure the enzyme does not penetrate into granulations and, consequently, has no negative effect on the newly formed tissues. The results obtained indicate that these processes are responsible for the potent therapeutic effect of the crab collagenase preparation.

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Lipid Spectrum of the Skin in Psoriasis

P. V. Sergeev, T. V. Ukhina, M. M. Shegai, and G. Zh. Kalmagambetova

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Lipids determine cell sensitivity to hormones and other biologically active substances [5]. Disturbances of lipid metabolism are observed in psoriasis [1], but the published data are incomplete and contradictory.

Comparative analysis of the lipid spectrum of both intact and pathologically altered skin in dermal psoriasis may be used for elucidating the individual pathogenetic stages, as well as for the development of effective and goal-directed treatment of this severe and puzzling disease. The aim of the present research was to study the lipid composition along with the activity of one of the enzymes of lipid metabolism, phospholipase A_2 (PLA-2), in the skin of patients with psoriasis.

Department of Molecular Pharmacology and Radiobiology, Russian State Medical University, Moscow

MATERIALS AND METHODS

Biopsy specimens obtained from psoriatic plaques (PP) and from visually unaltered portions of the skin (VUS) of patients with psoriasis served as the object of investigation.

Lipids were extracted from skin homogenate [4] after Folch [8]. The fractional content was determined by thin-layer chromatography in the

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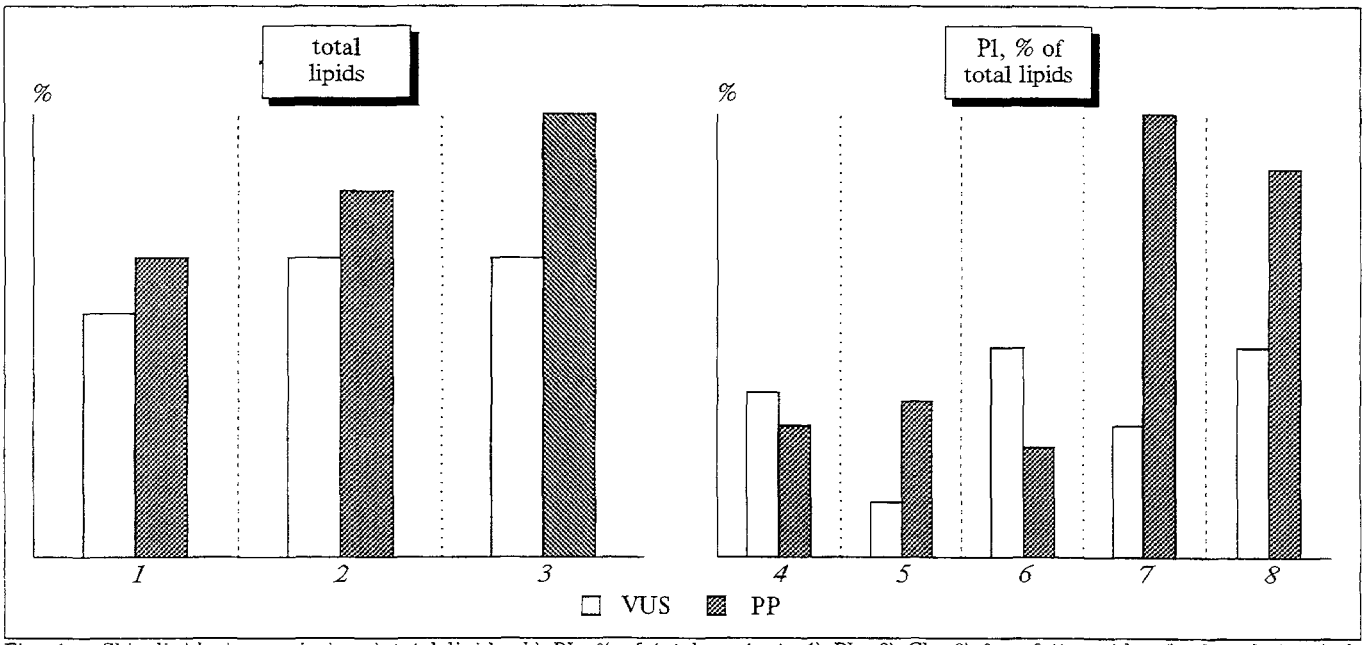

Fig. 1. Skin lipids in psoriasis. *a*) total lipids; *b*) PL, % of total content. *1*) PL, *2*) Ch; *3*) free fatty acids; *4*) phosphoinositol; *5*) SM; *6*) lysophosphatidylcholine; *7*) PC; *8*) PE.

systems n-hexane-diethyl ether-acetic acid (80:20:2) and chloroform-methanol-water (65:25:4), using Silufol-254 plates. The chromatograms were analyzed on EGR-65 densitometer (Carl Zeiss, Germany) in reflection mode at wavelength of 560 nm. Lipids were identified using their commercial preparations (Sigma, USA). The activity of PLA-2 was measured in homogenized samples [4]. The results were statistically processed after Student.

RESULTS

As was shown by the analysis of the lipid spectrum in the skin of patients with psoriasis, the total phospholipid (PL) content was higher in the PP as compared with the VUS of the same patients (Fig. 1, *a*). The ratio cholesterol/phospholipids (Ch/PL), indirectly characterizing the viscosity of the lipid bilayer [3], was 1.4-fold lower in the plaques. It may be assumed that the membrane structures of PP exhibit a higher "fluidity" than the intact skin.

Analysis of the content of PL fractions showed that their total content rose in PP (Fig. 1. *b*); the phosphatidylcholine (PC) content markedly increased, despite the increased activity of PLA-2 (PC is the main substrate of PLA-2) and the formation of membrane-"liquefying" and genome-activating lyso-PC [6] (Table 1, Fig. 1, *b*). Such a phenomenon may be due to phosphatidylethanolamine (PE) methylation, resulting in PC formation and in enhanced synthesis of the latter. The PE content in PP also rose, though to a lesser extent than that of PC. However, the PC/PE ratio characterizing the "fluidity" of membranes regularly rose. Along with the increase of the PE and PC content in PP, the relative content of sphingomyelin (SM), virtually absent in the normal skin, increased. It is worthy of note that SM activates 5'-nucleotidase [5], a marker enzyme of the plasma membranes (PM).

The above disturbances which occur in the skin in psoriasis may be attended not only by changes in the permeability of the PM in the cells of the skin, but also by altered activity of different membrane-bound enzymes. Both an increase [10] and a decrease [11] in the activity of PLA-2 in the skin of patients with psoriasis have been reported in the literature. We established that the activity of PLA-2 sharply increases in PP as compared with VUS (Table 1).

Glucocorticoids (cortisol, corticosterone, etc.) have a genome-mediated inhibitory effect on the activity of PLA-2 in the tissues [11]. Disturbances of the normal ratio between the activity of PLA-2 and the content of the clucocorticoid-dependent protein inhibitor lipocortin may be regarded as one of the possible causes of psoriasis development

TABLE 1. Activity of PHA−2 in PM and Lysosomes (LS) in Health and Psoriasis, nmol/min×g protein ($M \pm m$, $n = 6 - 10$)

Specimen	PHA-2	
	PM	LS
VUS	8.5±1.3	7.8±2.6
PP	12.6±1.7	15.2±2.8

[11]. In accordance with this hypothesis, the changes in the activity of PLA-2 "trigger" the above-described imbalance in the lipid composition of the skin.

Thus, it was established that the lipid composition of the skin changes in PP, this probably altering the recognition of biologically active ligands on the level of PM.

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EXPERIMENTAL PHARMACOLOGY

Effects of Ultrasound, Polyene Antibiotics, and Dyes on Acid Phosphatase Activity of Yeastlike *Candida* Fungal Cells

P. V. Sergeev, I. M. Romanenko, and T. V. Ukhina

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The importance of seeking or developing novel agents and methods, as well as their various combinations, that would enhance the fungicidal potential of therapy in patients with candidiasis, stems from the low efficacy of currently available treatments and the rising prevalence and incidence of this mycosis [1,5]. There are reports that purulent skin lesions and wound infections respond well to treatment with a combination of drugs and ultrasound [4,6,9,10], but the impact of such combinations on fungi, in particular those of the genus *Candida*, has not been investigated, and it is therefore not possible to provide any pathogenetically substantiated recommendations on the application of this method in the treatment of candidiasis.

Department of Molecular Pharmacology, Biomedical Faculty, Russian State Medical University, Moscow.

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